Payers and Receivers: Various Proposals for the High Cost Fund

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Carol Weinhaus, Sandra Makeeff, Brian Roberts, *et al.*
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The views expressed in this paper do not necessarily reflect the viewpoints of individual participants.

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The Telecommunications Industries Analysis Project is associated with the Public Utility Research Center at the University of Florida College of Business Administration.

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List of Acronyms

List of Acronyms

ARMIS	Automated Reporting Management Information System
BCPM	Benchmark Cost Proxy Model
CFR	Code of Federal Regulations
CL	Common Line
CLEC	Competitive Local Exchange Carrier
CMRS	Commercial Mobile Radio Services
CTIA	Cellular Telecommunications Industry Association
DEM	Dial Equipment Minutes
FCC	Federal Communications Commission
HAI	Hatfield Associates, Inc. Model
HCF	High Cost Fund
ILECs	Incumbent Local Exchange Carriers
IS	Interstate
IXC	Interexchange Carrier
LEC	Local Exchange Carrier
LTS	Long Term Support
MOU	Minutes of Use
NARUC	National Association of Regulatory Utility Commissioners
NECA	National Exchange Carrier Association
PCIA	Personal Communications Industry Association
PCS	Personal Communications Services
REA	Rural Electrification Administration
RHC	Rural Health Care
TIAP	Telecommunications Industries Analysis Project
U.S.	United States
USAC	Universal Service Administrative Company
USF	Universal Service Fund

Project Information

List of Participants in the Telecommunications Industries Analysis Project

February 1998

State Regulators	NARUC Representatives from: California Public Utilities Commission Florida Public Service Commission Illinois Commerce Commission Iowa Utilities Board Massachusetts Department of Telecommunications and Energy
Companies and Governments	AT&T Bell Atlantic BellSouth Corning GTE Kalona Cooperative Telephone MCI Telecommunications Corp. Nortel NTT America SBC Communications Inc. Sprint Sprint Local Telecom Division U S WEST

Sponsors:

Corporation for Public Broadcasting

Assisting with *public* data:

Bellcore
Federal Communications Commission
National Exchange Carrier Association
National Telecommunications and Information Administration

Project Information, cont.

Background on the Telecommunications Industries Analysis Project

The Telecommunications Industries Analysis Project (TIAP), a seven-year-old research consortium, conducts and reports impartial research in the areas where network planning, business financials, and public policy (regulation and legislation) intersect. The participants actively work together to develop new options for telecommunications policies to meet the needs of consumers, governments, and companies in a changing, competitive environment. Participants include regulators, domestic and foreign telecommunications companies, materials and equipment manufacturers, and other communications-based organizations.

The purpose of the Project is to produce research and analysis that will assist policy makers in making informed decisions.

TIAP incorporates the following features:

- **Neutral setting**
  The Project provides a neutral setting, free of partiality, thereby ensuring objective and independent research.

- **Multiple viewpoints**
  Participants play an active role in the research and analysis, represent their own interests, and understand and assist in developing others' perspectives.

- **Analysis and results of alternatives**
  The Project provides research data, tools, and models for critical decision making.

- **Public distribution of research**
  Data used by this Project are publicly available. Research products become public domain information.

I. Introduction

Objective

This paper models various proposals for the new high cost fund (HCF) that starts January 1, 1999.[1] The proxy cost models are slated to determine the HCF amounts for the large local exchange carriers (LECs), called "non-rural companies". The rural LECs will continue with the current mechanisms until new ones are developed.[2]

The calculations in this paper build on earlier modeling of options.[3] Where possible, the results are calculated on a comparable basis, allowing the reader to examine the effect on customers and states.

This paper models six different options and some variations. Some options are new; others are from a previous paper, *Options for Universal Service*. These earlier options are recalculated with the new input numbers.[4]

Time constraints limited the modeling and description of options in this paper. Other options that use variations of the mechanisms described in this paper or that use completely different mechanisms are also possible.

This paper focuses on support for high-cost areas. It omits assistance to low-income households as well as new support mechanisms required by the *Telecommunications Act of 1996*, such as funding telecommunications for schools, libraries, and rural health care.[5] While the focus of the options is on the high cost fund for the non-rural companies, the high cost fund amounts for the rural companies are included in the results to show the total impact. For each option, this paper shows which states are net payers and receivers from the high cost fund. It does not recommend any method of reduction in prices for services offered by companies receiving subsidies.

The sections in this paper cover the following items:

- **Section II, What Does Each Option Cover?:** Provides a description of the high cost fund, the overall method used to model various options for this fund, a brief description of each option, and a comparison of the current and the proposed treatment of these subsidies.
- **Section III, Option 1A: Ad Hoc Proposal:** Describes and models Option 1A, the Ad Hoc Proposal. Results show a hypothetical nationwide surcharge, the size of the high cost fund, which states pay and which states receive dollars from this fund. Results of this option and other options in **Section IV** through **Section XI** allow comparisons among options.
- **Section IV, Option 1B: Modified Ad Hoc Proposal — Proxy Model Results or "Hold Harmless":** Describes Option 1B.
- **Section V, Option 1C: Modified Ad Hoc Proposal — Proxy Model Results or "Hold Harmless" with 50% or 40% Interstate:** Describes Option 1C.
- **Section VI, Option 2: $50 Interstate Benchmark; $30 State Benchmark:** Describes Option 2.
- **Section VII, Option 3: Density Zones:** Describes Option 3.
- **Section VIII, Option 4A: FCC Plan: 25% Interstate/75% State:** Describes Option 4A.
- **Section IX, Option 4B: Modified FCC Plan:** 40% Interstate/ 60% State: Describes Option 4B.
- **Section X, Option 5: Telephone Numbers:** Describes Option 5.
- **Section XI, Option 6: Percentage of Retail Revenues:** Describes Option 6.
- **Section XII, Appendix A: What is the History of these Issues?:** Provides a brief historical background on subsidies, both explicit and implicit.
- **Section XIII, Appendix B: Cash Flow Diagram:** Shows the cash flow for the FCC's new universal service plan for current subsidy mechanisms which includes the high cost fund.

I. Introduction, cont.

- **Section XIV, Appendix C: Sources, Calculations, and Assumptions:** Provides background on sources, calculations, and assumptions used to model the options.
- **Section XV, Appendix D: Input Data:** Provides the input data for developing the net payer and receiver charts for the FCC's plan, Option 5 (Telephone Numbers), and Option 6 (Percentage of Retail Revenues).
- **Section XVI, Notes:** Provides sources and additional technical background.

II. What Does Each Option Cover?

What is the New High Cost Fund?

Currently, the FCC, in consultation with the Federal-State Joint Board, is in the process of determining the amount of subsidy that should be provided to high-cost areas for non-rural companies. While this paper only focuses on one aspect of the subsidy issue, there are other subsidies that will also have an impact on which states are net payers and receivers.

The table in **Figure 1** provides a list of the 1998 subsidies, for both rural and non-rural companies. **Figure 1** also provides the old and new names for the components of the high cost fund.

The 1998 total subsidy amount, with the high cost fund (assistance for high-cost companies), lifeline/link-up (assistance to low-income households), and the new schools, libraries and rural health care payments, is $4.9 billion. The focus of this paper is on various options for the new high cost fund, as it will exist on January 1, 1999, for non-rural companies. The 1998 non-rural high cost fund is $341.2 million.

What Does this Paper Model?

The purpose of this paper is to demonstrate, in a comparable manner, the effect on customers and states, assuming a federal fund of various sizes, and assuming the fund is collected using diverse options. Two forward-looking cost models, the Benchmark Cost Proxy Model (BCPM) and the Hatfield Associates, Inc. Model (HAI), are under consideration for this task.[6] This paper will not address nor make any judgments on the models. The results for the options are modeled using six differently sized funds (unless otherwise specified by the option).

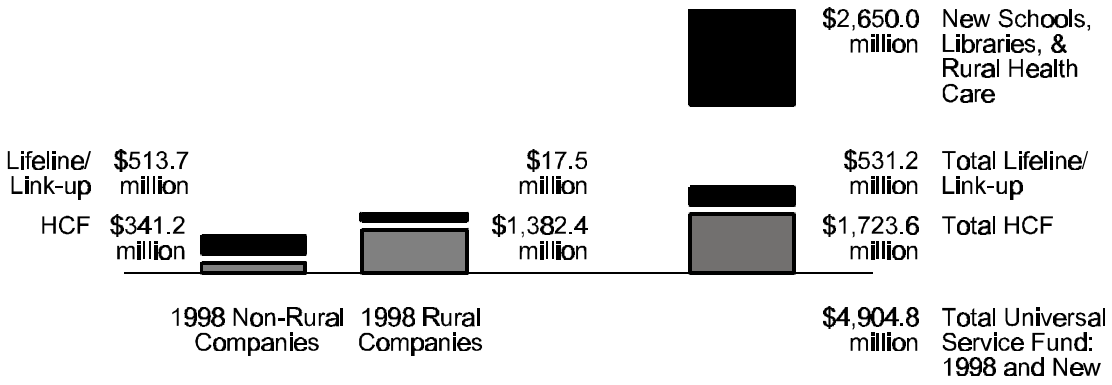
All assumptions in this paper represent the new high cost fund, as it will exist on January 1, 1999. This paper only explores options for the new 1999 high cost fund for non-rural companies.[7] **Figure 1** shows the 1998 rural and non-rural components of the high cost fund. The total high cost fund is $1,723.6 million with $341.2 million for the non-rural companies and $1,382.4 million for the rural companies.

Figure 2 shows the method used to calculate which states are net payers and net receivers from the new high cost fund in 1999 for Options 2 through 6. The 1998 non-rural high cost fund amount of $341.2 million is replaced with the results of modeling various options. These results are added to the 1998 high cost fund amounts for rural companies to produce the 1999 totals for the various options. Options 2 through 6 use only proxy model non-rural costs because the FCC's Plan initially only covers non-rural company costs. Options 1A, 1B, and 1C include both rural and non-rural company costs since this is part of the Ad Hoc Proposal.[8] All options use both the BCPM and the HAI proxy model data.[9]

Options 1A, 1B, and 1C use FCC's recommended benchmarks of $31 for residence and $51 for business. For the remaining Options 2 through 6, the fund is sized at one to three revenue benchmarks ($30, $40, and $50). The reader is cautioned that the size of the fund produced with these benchmarks will probably not be the amount produced in the final model adopted by the FCC. The illustrations and the range of amounts shown should be used as *indicator*s for the size of the fund and the impact on the states and the customers.

II. Total USF: Figure 1

Figure 1: Total Universal Service Fund — 1998 Subsidies and New Subsidies



	Dollars (in Millions)		
1998 Subsidies	**Non-Rural Companies**	**Rural Companies**	**Total**
Lifeline/Link-up: Renamed "Low Income Fund"	$513.7	$17.5	$531.2
1998 High Cost Fund (HCF):			
Long Term Support (LTS)	$124.5*	$346.6	$471.1
*Weighted Dial Equipment Minutes (DEM): Renamed "Local Switching Support"	0.0*	426.8	426.8
Old Universal Service Fund (USF): Renamed "High Cost Loop Fund"	216.7*	609.0	825.7
Total High Cost Fund	341.2*	1,382.4	1,723.6
New Subsidies**			
Schools and Libraries			$2,250.0
Rural Health Care Providers			400.0
Total Education and Health Care			2,650.0
Total Universal Service Fund (USF) — 1998 and New Subsidies			$4,904.8

* In modeling the options in this paper, the total high cost fund (HCF) for the non-rural companies is replaced by data from the proxy models (BCPM and HAI). This proxy model data is then added to the rural data. Non-rural companies are those LECs with a total of more than 100,000 access lines. Rural companies are those with a total of 100,000 access lines or less.

**The amounts are based on the maximum levels set by the FCC.

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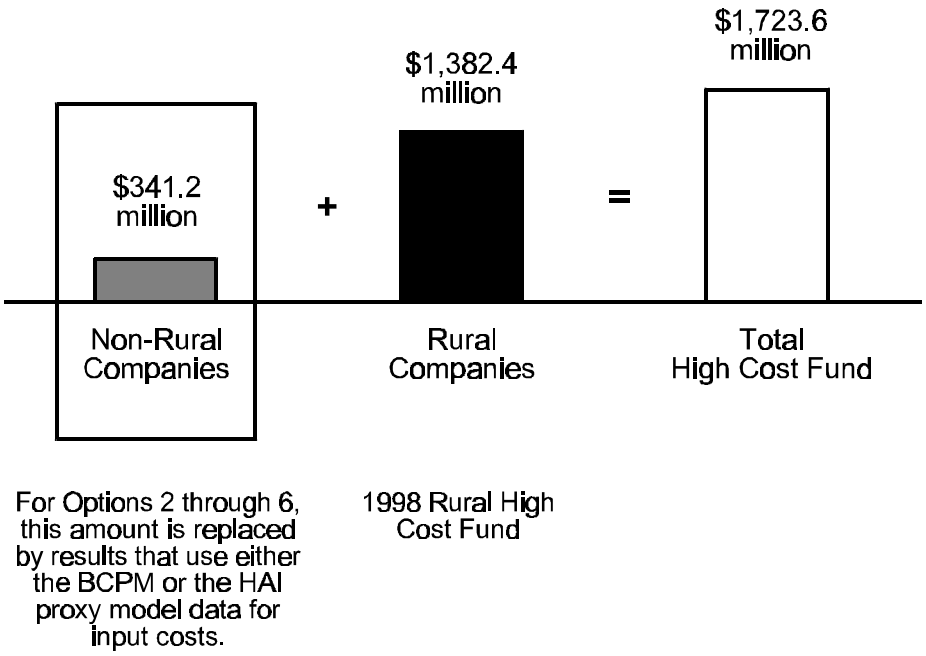
II. Calculation of Total HCF: Figure 2

Figure 2: Calculation of Total High Cost Fund for Options 2 through 6



For each option (except for Options 1A, 1B, and 1C), the 1998 amount for the non-rural companies (large local exchange carriers) is replaced with modeling results. The new number for the non-rural is added to the current 1998 amount for the rural companies (small local exchange carriers). This revised total becomes the basis for results shown in Figures 9 through 24.

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II. What Does Each Option Cover?, cont.

It should also be noted that the model output data is only for the non-rural companies. The actual proxy models generate totals (non-rural and rural). Therefore, the default output data generated by the proxy models is greater than the non-rural outputs used in this paper.[10]

This paper looks at funding of the high cost fund only on the federal (interstate) level. It makes no assumptions regarding the method of collecting or distributing a state fund. Individual states may want to provide support for prices that fall below the benchmarks modeled in this paper; or states may determine that the state support needed is less than that produced by the model. In other words, a state may need more or less than the amounts modeled in this paper. In addition, states may decide that additional services beyond those supported by the FCC, are worthy of state support.

What Questions Need to be Asked About Each Option?

The following is a list of questions that should be answered to determine if a proposal for the high cost fund meets the requirements of the *Act of 1996*, the needs of a competitive industry, and accomplishes the goal of supporting truly high-cost areas. These questions are discussed in detail in TIAP's *Options for the Universal Service Fund*:[11]

- Does the fund accomplish the goal of providing sufficient support to high-cost areas so that rates can be affordable?
- Is the fund competitively neutral?
- Is the fund revenue neutral?
- Is the fund explicit?

What are Some Options?

The following is a brief overview of the options presented in this paper. **Sections III through XI** present the results of modeling each of these options. Each section contains a description of the option, a calculated nationwide surcharge for various fund sizes (allows comparisons among options), and whether a state is a net payer or a net receiver from the funds.

- **Option 1A: Ad Hoc Proposal**
  Proposed by an ad hoc National Association of Regulatory Utility Commissioners (NARUC) work group. This option sends funds to those states with average costs above an established nationwide average. This option also sets rules for state distribution of these funds. It should be noted that the Ad Hoc Proposal's calculations does not include high cost support for Alaska and Puerto Rico, or any Long Term Support Eligible states receive funds based on the following choices:
  1. The lesser of embedded costs and incremental costs (results based on the proxy models).
  2. The greater of the result from the above step and "hold harmless" data (current amount received from the old universal service fund, or USF).
- **Option 1B: Modified Ad Hoc Proposal — Proxy Model Results or "Hold Harmless"**
  This option is the same as Option 1A except that it omits embedded costs in determining the results.
- **Option 1C: Modified Ad Hoc Proposal — Proxy Model Results or "Hold Harmless" with 50% or 40% Interstate**
  This option is the same as Option 1A except that it omits embedded costs in determining the results and changes the interstate support to 50% or 40% of the calculated support from the proxy models.
- **Option 2: $50 Interstate Benchmark; $30 State Benchmark**
  This option increases the support defined in Option 4A (the FCC Plan) for those areas with very high costs for providing local service.

II. What Does Each Option Cover?, cont.

- **Option 3: Density Zones**

  This option targets federal funds for the least populated areas of the country where costs are highest and where competition will probably develop more slowly, if at all.

- **Option 4A: FCC's Plan: 25% Interstate/75% State**

  In the FCC Plan, the high cost fund is based on a federal contribution of 25% of the calculated support and states may be responsible for the remaining contribution of 75%.

- **Option 4B: Modified FCC Plan: 40% Interstate/60% State**

  This option shows the impact of increasing the federal support from 25% to 40% and decreasing the potential state responsibility accordingly.

- **Option 5: Telephone Numbers**

  In this option, there is a nationwide surcharge applied to each telephone number per month on the customer's bill.

- **Option 6: Percentage of Retail Revenues**

  In this option, there is a nationwide surcharge assessed as a percentage of total retail revenues on the customer's bill.

II. What Does Each Option Cover?, cont.

What Does Each Option Cover?

While the options were modeled to allow comparisons, the options for the high cost fund may answer one or more of the following three questions differently:

1. How is it collected? Who pays? Where does the money come from?
2. How much? What is the size of the fund?
3. Who gets the money? Who receives the dollars from the fund?

What's the option for the high cost fund?	How is it collected?	How much?	Who gets the money?
Option 1A: Ad Hoc Proposal	Interstate revenues.	Interstate: $1.2 billion to $1.7 billion.	State grant with limited discretion of distribution.
Option 1B: Modified Ad Hoc Proposal — Proxy Model Results or "Hold Harmless"	Interstate revenues.	Interstate: $2.5 billion to $4.5 billion.	State grant with limited discretion of distribution.
Option 1C: Modified Ad Hoc Proposal — Proxy Model Results or "Hold Harmless" with 50% Interstate	Interstate revenues.	Interstate: $1.6 billion to $2.9 billion.	State grant with limited discretion of distribution.
Option 1C: Modified Ad Hoc Proposal — Proxy Model Results or "Hold Harmless" with 40% Interstate	Interstate revenues.	Interstate: $1.3 billion to $2.4 billion.	State grant with limited discretion of distribution.
Option 2: $50 Interstate Benchmark; $30 State Benchmark.	Interstate revenues.	Interstate: $2.6 billion to $8.3 billion. Remaining State Responsibility: $1.1 billion to $3.4 billion.	Distribution to specific companies based on proxy models.
Option 3: Density zones.	Interstate revenues.	Interstate: $2.4 billion to $4.0 billion. Remaining State Responsibility: $1.9 billion to $7.7 billion.	Distribution to specific companies based on proxy models.
Option 4A: FCC Plan: 25% Interstate/75% State	Interstate revenues.	Interstate: $1.6 billion to $3.9 billion. Remaining State Responsibility: $0.6 billion to $7.7 billion.	Distribution to specific companies based on proxy models.

II. What Does Each Option Cover?, cont.

What's the option for the high cost fund?	How is it collected?	How much?	Who gets the money?
Option 4B: Modified FCC Plan: 40% Interstate/60% State	Interstate revenues.	Interstate: $1.7 billion to $5.5 billion. Remaining State Responsibility: $0.5 billion to $6.2 billion.	Distribution to specific companies based on proxy models.
Option 5: Telephone Numbers	Surcharge on end user based on telephone numbers.	Total: $2.2 billion to $11.7 billion.	Distribution to specific companies based on proxy models.
Option 6: Percent of Retail Revenues	Surcharge on end user based on percent of total (interstate and state) retail revenues.	Total: $2.2 billion to $11.7 billion.	Distribution to specific companies based on proxy models.

II. What Does Each Option Cover?, cont.

What is the Difference between the Current and the Proposed High Cost Fund?

In evaluating the options in this paper, one of the questions that needs to be answered, regardless of whether a state pays into the fund or receives from the fund, is "Will the state be better or worse off than it is today?" The same question can also be asked for rural and non-rural companies. **Figures 3 and 4** are an example of this type of comparison using the proposed FCC Plan (Option 4A). These figures compare current high cost fund subsidies (old USF) with the FCC's proposed high cost fund. This type of comparison can be made with other options.

These figures show non-rural, rural, and total amounts for both current and proposed high cost fund subsidies. The calculations use cost data from each of the two proxy models (BCPM or HAI) for the non-rural companies and use 1998 calculations for the rural companies. The amounts for the proposed high cost fund in **Figures 3 and 4** are calculated assuming 25% of the subsidy is based on interstate retail revenues and fund costs above $30 per month per line.

The results are provided on a state-by-state basis and show the net payers and net receivers from the high cost fund. A positive amount indicates a net receiver; a negative amount indicates a net payer. The net monthly per line amount for each state is calculated by subtracting from the interstate subsidy for this state the product of the interstate surcharge on retail revenues needed to fund 25% of the calculated subsidy times the interstate retail revenues for this state (Option 4A, FCC Plan). This result is then divided by the number of access lines (USF loops) in the state and by twelve months to produce payers and receivers on a per line basis.

II. Current/Proposed HCF, Figure 3

Figure 3: Comparison of Current and Proposed High Cost Fund Support: Net Payers and Receivers per Access Line per Month, BCPM

State	Current Non-Rural	Current Rural	Current Total	BCPM Proposed Non-Rural	BCPM Proposed Rural	BCPM Proposed Total
	Current	Current	Current	$30	$30	$30
AK	($1.03)	$22.80	$12.87	($2.08)	$21.51	$11.68
AL	($0.36)	$10.51	$0.57	$1.21	$9.56	$1.93
AR	($0.46)	$12.41	$3.56	$1.48	$11.41	$4.58
AZ	($0.98)	$12.36	($0.13)	($1.20)	$11.08	($0.41)
CA	($0.61)	$17.38	($0.44)	($1.03)	$16.70	($0.85)
CO	($0.97)	$29.64	$0.42	($1.27)	$28.60	$0.09
CT	($1.12)	$4.65	($1.06)	($1.98)	$3.23	($1.93)
DC	($0.89)	$0.00	($0.89)	($2.07)	$0.00	($2.07)
DE	($1.08)	$0.00	($1.08)	($1.71)	$0.00	($1.71)
FL	($0.91)	$10.08	($0.74)	($1.56)	$9.02	($1.39)
GA	($0.83)	$10.25	$0.30	($1.00)	$9.23	$0.04
HI	($0.84)	$0.00	($0.81)	($1.29)	$0.00	($1.26)
IA	($0.80)	$5.36	$0.81	$0.98	$4.28	$1.84
ID	$0.40	$15.97	$2.56	$1.18	$14.91	$3.08
IL	($0.77)	$7.68	($0.53)	($0.74)	$6.63	($0.53)
IN	($0.78)	$8.51	($0.36)	$0.11	$7.66	$0.45
KS	($0.92)	$18.66	$2.25	$0.49	$17.64	$3.27
KY	($0.85)	$6.38	$0.09	$0.73	$5.39	$1.33
LA	($0.74)	$30.82	$1.52	$0.56	$30.05	$2.67
MA	($0.87)	$8.51	($0.86)	($1.68)	$7.56	($1.67)
MD	($0.94)	$6.98	($0.93)	($1.65)	$5.47	($1.64)
ME	($0.92)	$8.51	$0.87	$0.69	$7.69	$2.02
MI	($0.62)	$9.66	($0.20)	($0.27)	$8.95	$0.10
MN	($0.75)	$8.55	$0.34	$0.45	$7.66	$1.30
MO	($0.59)	$15.07	$0.48	$0.81	$14.28	$1.73
MS	($0.31)	$18.45	$0.89	$3.44	$17.60	$4.34
MT	($0.82)	$22.42	$6.40	$2.68	$21.25	$8.45
NC	($0.54)	$5.85	($0.11)	($0.10)	$5.00	$0.25
ND	($1.39)	$12.08	$3.75	$0.58	$11.19	$4.63
NE	($0.95)	$8.86	$0.84	$1.45	$7.81	$2.61
NH	($1.15)	$13.36	($0.26)	($1.17)	$11.89	($0.37)
NJ	($1.03)	$7.49	($1.02)	($2.30)	$6.38	($2.29)
NM	($0.82)	$19.85	$2.22	$0.09	$18.60	$2.81
NV	($1.20)	$8.20	($0.54)	$0.63	$6.88	$1.08
NY	($0.87)	$6.69	($0.62)	($1.44)	$5.76	($1.20)
OH	($0.81)	$6.26	($0.62)	($0.54)	$5.35	($0.38)
OK	($0.77)	$21.47	$1.82	$0.99	$20.53	$3.26
OR	($0.94)	$11.87	$0.66	($0.55)	$10.97	$0.89
PA	($0.73)	$2.95	($0.54)	($0.83)	$1.98	($0.68)
PR	$9.70	$0.00	$9.70	($0.44)	$0.00	($0.44)
RI	($1.00)	$0.00	($1.00)	($1.82)	$0.00	($1.82)
SC	($0.45)	$5.11	$0.99	($0.17)	$3.96	$0.90
SD	($1.36)	$11.09	$2.80	$1.86	$10.26	$4.66
TN	($0.90)	$5.19	($0.16)	($0.22)	$4.22	$0.32
TX	($0.55)	$16.42	$0.15	$0.18	$15.60	$0.82
UT	($1.03)	$13.22	($0.33)	($1.55)	$12.25	($0.87)
VA	($0.96)	$6.67	($0.71)	($0.64)	$5.75	($0.43)
VT	($0.81)	$13.92	$1.47	$0.38	$13.41	$2.40
WA	($0.27)	$6.44	$0.20	($0.65)	$5.44	($0.22)
WI	($0.71)	$6.67	$0.63	$0.04	$5.77	$1.08
WV	($0.69)	$9.32	$0.98	$4.24	$8.18	$4.90
WY	($0.10)	$31.59	$5.23	$2.86	$30.26	$7.47
Total	**($0.68)**	**$10.87**	**$0.00**	**($0.62)**	**$9.90**	**$0.00**

II. Current/Proposed HCF, Figure 4

Figure 4: Comparison of Current and Proposed High Cost Fund Support: Net Payers and Receivers per Access Line per Month, HAI

State	Current Non-Rural	Current Rural	Current Total	HAI Proposed Non-Rural	HAI Proposed Rural	HAI Proposed Total
	Current	Current	Current	$30	$30	$30
AK	($1.03)	$22.80	$12.87	($0.97)	$22.67	$12.82
AL	($0.36)	$10.51	$0.57	($0.18)	$10.41	$0.73
AR	($0.46)	$12.41	$3.56	($0.45)	$12.31	$3.53
AZ	($0.98)	$12.36	($0.13)	($0.99)	$12.23	($0.14)
CA	($0.61)	$17.38	($0.44)	($0.67)	$17.32	($0.49)
CO	($0.97)	$29.64	$0.42	($0.88)	$29.54	$0.50
CT	($1.12)	$4.65	($1.06)	($1.20)	$4.51	($1.14)
DC	($0.89)	$0.00	($0.89)	($1.01)	$0.00	($1.01)
DE	($1.08)	$0.00	($1.08)	($1.11)	$0.00	($1.11)
FL	($0.91)	$10.08	($0.74)	($0.95)	$9.98	($0.78)
GA	($0.83)	$10.25	$0.30	($0.96)	$10.15	$0.17
HI	($0.84)	$0.00	($0.81)	($0.53)	$0.00	($0.50)
IA	($0.80)	$5.36	$0.81	($0.44)	$5.25	$1.04
ID	$0.40	$15.97	$2.56	($0.41)	$15.86	$1.85
IL	($0.77)	$7.68	($0.53)	($0.65)	$7.57	($0.41)
IN	($0.78)	$8.51	($0.36)	($0.51)	$8.42	($0.11)
KS	($0.92)	$18.66	$2.25	($0.50)	$18.55	$2.59
KY	($0.85)	$6.38	$0.09	($0.54)	$6.28	$0.35
LA	($0.74)	$30.82	$1.52	($0.47)	$30.75	$1.77
MA	($0.87)	$8.51	($0.86)	($0.95)	$8.41	($0.94)
MD	($0.94)	$6.98	($0.93)	($0.95)	$6.83	($0.93)
ME	($0.92)	$8.51	$0.87	($0.17)	$8.43	$1.46
MI	($0.62)	$9.66	($0.20)	($0.54)	$9.59	($0.13)
MN	($0.75)	$8.55	$0.34	($0.32)	$8.46	$0.71
MO	($0.59)	$15.07	$0.48	($0.12)	$14.99	$0.92
MS	($0.31)	$18.45	$0.89	$0.41	$18.36	$1.55
MT	($0.82)	$22.42	$6.40	($0.14)	$22.30	$6.84
NC	($0.54)	$5.85	($0.11)	($0.48)	$5.76	($0.06)
ND	($1.39)	$12.08	$3.75	($0.65)	$11.99	$4.17
NE	($0.95)	$8.86	$0.84	$0.38	$8.75	$1.91
NH	($1.15)	$13.36	($0.26)	($0.93)	$13.21	($0.07)
NJ	($1.03)	$7.49	($1.02)	($1.19)	$7.38	($1.18)
NM	($0.82)	$19.85	$2.22	($0.79)	$19.73	$2.23
NV	($1.20)	$8.20	($0.54)	($0.87)	$8.06	($0.24)
NY	($0.87)	$6.69	($0.62)	($0.80)	$6.60	($0.55)
OH	($0.81)	$6.26	($0.62)	($0.67)	$6.17	($0.49)
OK	($0.77)	$21.47	$1.82	($0.24)	$21.37	$2.27
OR	($0.94)	$11.87	$0.66	($0.81)	$11.78	$0.77
PA	($0.73)	$2.95	($0.54)	($0.66)	$2.85	($0.48)
PR	$9.70	$0.00	$9.70	($0.55)	$0.00	($0.55)
RI	($1.00)	$0.00	($1.00)	($1.10)	$0.00	($1.10)
SC	($0.45)	$5.11	$0.99	($0.88)	$5.00	$0.64
SD	($1.36)	$11.09	$2.80	($0.54)	$11.01	$3.31
TN	($0.90)	$5.19	($0.16)	($0.70)	$5.09	$0.01
TX	($0.55)	$16.42	$0.15	($0.43)	$16.34	$0.27
UT	($1.03)	$13.22	($0.33)	($0.91)	$13.13	($0.22)
VA	($0.96)	$6.67	($0.71)	($0.61)	$6.57	($0.38)
VT	($0.81)	$13.92	$1.47	($0.50)	$13.87	$1.73
WA	($0.27)	$6.44	$0.20	($0.73)	$6.34	($0.24)
WI	($0.71)	$6.67	$0.63	($0.56)	$6.58	$0.73
WV	($0.69)	$9.32	$0.98	$0.33	$9.21	$1.81
WY	($0.10)	$31.59	$5.23	($0.22)	$31.45	$5.11
Total	**($0.68)**	**$10.87**	**$0.00**	**($0.67)**	**$10.77**	**$0.00**

III. Option 1A: Ad Hoc Proposal

Option 1A: Ad Hoc Proposal

This proposal is from an ad hoc group working at the request of the Chairman of the NARUC Communications Committee. With the Ad Hoc Proposal, the following points provide an overview of the major steps used to calculate and to distribute the high cost fund among the states:

1. "Using forward-looking cost models, calculate the difference between each state's average cost and the national average."[12] "That amount, if distributed to carriers, would allow the state's net cost to be reduced to the national average."[13] In order to account for separations effects, "Federal support under step 1 is set equal to 75% of that amount."[14]

2. "Using reported embedded costs of incumbent carriers, calculate the difference between each state's average (embedded) cost and the national average."[15] Like step 1, federal support is set equal to approximately 75% of that amount. "To the extent that embedded costs are used in calculating federal fund distributions, because of the history of funding the high cost program, the reasonably comparable standard can be pushed as high as 105% of national cost."[16]

3. "For each state, take the lesser of the amounts from step 1 and step 2. This is the minimum amount of federal support for each state."[17]

4. "Calculate hold-harmless support for each state. For most states, this consists of support under existing support systems (i.e., support for loops and switches). For states with above average embedded costs that currently make a net contribution to federal support, the hold-harmless amount is increased to ensure that the state will not have to increase its net contribution."[18]

5. "Federal support under the proposal is the greater of this 'hold-harmless' amount and the amount from step 3."[19]

6. "State commissions would assign federal support first to carriers who would receive support under existing systems, and distribute remaining support (if any) according to plans adopted by the states and approved by the FCC to ensure consistency with the Telecom Act." States could distribute federal support in accordance with one of several options, each of which would ensure that rates in rural areas are reasonably comparable to rates in urban areas.[20]

Monthly Surcharges for Option 1A: Ad Hoc Proposal

	Option 1A: Nationwide Surcharge* (%)		Interstate Fund: Net of 75% Interstate Incremental, Embedded, and "Hold Harmless" (in millions)
Amount of Benchmark (in dollars)	Average Cost		Average Cost
BCPM	2.4%		$1,699 m
HAI	1.7%		$1,196 m

*This hypothetical surcharge is based on 1996 interstate retail revenues. The benchmark for the proxy models is set at average cost. For BCPM this is $34.20 and for HAI it is $21.38. The benchmark for embedded cost is set at 105% of average cost, $35.58.

The above chart contains hypothetical nationwide surcharges that, under Option 1A (the Ad Hoc Proposal), would generate support calculated by the Ad Hoc model. The Ad Hoc model's forward-looking costs are replaced with two separate proxy models inputs — BCPM and HAI for total (rural and non-rural) costs. These two hypothetical surcharges calculated for Option 1A provide a range of results. The surcharge is the interstate fund generated from each model divided by interstate retail revenues.[21] The surcharge is for comparison purposes only. Actual collection is through service rates.[22]

The chart shows a nationwide hypothetical monthly surcharge for both totals (BCPM and HAI). The calculations by the NARUC Ad Hoc Working Group show a hypothetical interstate surcharge of 2.4%.[23] The amount of state responsibility will be determined by the state and will be dependent upon the level of deaveraging, the level of the rates within the state, and the necessity of technology modernization.

Figure 5 illustrates Option 1A, the Ad Hoc Proposal. These tables show the amount needed per month per line to support the federal fund for both non-rural and rural companies. **Figure 5** indicates net payers and receivers from the fund. This difference between what a state receives minus what it pays determines whether the state is a net payer or a net receiver. As with the earlier charts, a positive amount in **Figure 5** indicates a net receiver; a negative amount indicates a net payer. The monthly per line amount for each state is calculated by subtracting from the interstate subsidy for this state the product of the interstate surcharge on interstate retail revenues times the interstate retail revenues for this state. This result is then divided by the number of access lines (USF loops) in the state and by twelve months to produce payers and receivers on a per line basis.

III. Option 1A: Figure 5

Figure 5: Option 1A: Ad Hoc Proposal, Net Payers and Receivers per Access Line per Month, BCPM and HAI

State	BCPM Average Cost	State	HAI Average Cost	
AK	NA	AK	NA	
PR	NA	PR	NA	
WY	9.03	WY	8.85	
VT	8.41	MT	6.85	
MT	6.85	MS	6.14	
MS	6.12	VT	6.09	
AR	5.42	AR	5.39	
ME	4.59	ME	4.60	
WV	4.23	WV	4.14	
NM	4.00	NM	3.96	
SC	3.38	ID	3.04	
ID	2.45	KS	2.46	
KS	2.41	NE	2.10	
LA	2.34	KY	2.07	
NE	2.17	SC	1.92	
KY	2.09	SD	1.87	
SD	1.93	ND	1.74	
GA	1.51	LA	1.58	
ND	1.49	OK	1.47	
OK	1.13	AL	0.72	
OR	0.61	CO	0.66	
NC	0.50	OR	0.59	
TX	0.32	GA	0.53	
NH	0.29	NC	0.49	
AL	0.28	MO	0.44	
MO	0.09	NH	0.31	
WI	(0.15)	TX	0.26	
CO	(0.19)	WI	0.07	
WA	(0.21)	WA	0.07	**Receiver**
AZ	(0.28)	AZ	(0.09)	**Payer**
MI	(0.35)	MI	(0.27)	
MN	(0.48)	UT	(0.36)	
CA	(0.50)	MN	(0.36)	
UT	(0.53)	CA	(0.55)	
IN	(0.62)	FL	(0.58)	
TN	(0.65)	TN	(0.58)	
IA	(0.65)	IA	(0.60)	
FL	(0.66)	IN	(0.64)	
IL	(0.67)	OH	(0.74)	
NY	(0.71)	NY	(0.76)	
OH	(0.73)	IL	(0.77)	
PA	(0.73)	PA	(0.79)	
HI	(0.80)	HI	(0.92)	
VA	(0.84)	VA	(0.93)	
DC	(0.85)	RI	(0.99)	
MD	(0.90)	MA	(1.05)	
MA	(0.90)	MD	(1.08)	
RI	(0.98)	DE	(1.17)	
DE	(0.98)	CT	(1.24)	
NJ	(1.00)	NJ	(1.29)	
CT	(1.14)	DC	(2.05)	
NV	(2.94)	NV	(2.94)	

IV. Option 1B: Modified Ad Hoc Proposal — Proxy Model Results or “Hold Harmless”

Option 1B: Modified Ad Hoc Proposal — Proxy Model Results or "Hold Harmless"

This option is the same as Option 1A except that it omits embedded costs in determining the results. Therefore, embedded costs are not used to determine the size or distribution of funds.

Monthly Surcharges for Option 1B: Modified Ad Hoc Proposal — Proxy Model Results or "Hold Harmless"

	Option 1B: Nationwide Surcharge* (%)		**Interstate Fund: Net of 75% Interstate Incremental and "Hold Harmless" (in millions)**
Amount of Benchmark (in dollars)	Average Cost		Average Cost
BCPM	6.2%		$4,461 m
HAI	3.5%		$2,514 m

*This hypothetical surcharge is based on 1996 interstate retail revenues. The benchmark for the proxy models is set at average cost. For BCPM this is $34.20 and for HAI it is $21.38.

IV. Option 1B: Figure 6

Figure 6: Option 1B: Modified Ad Hoc Proposal — Proxy Model Results or "Hold Harmless", Net Payers and Receivers per Access Line per Month, BCPM and HAI

State	BCPM Average Cost	State	HAI Average Cost	
AK	NA	AK	NA	
PR	NA	PR	NA	
SD	17.56	SD	27.00	
ND	14.27	ND	26.98	
MT	13.78	MT	26.19	
AR	13.04	WY	14.76	
MS	12.39	NE	12.67	
WV	11.43	WV	9.30	
IA	11.40	MS	8.98	
WY	8.73	AR	7.44	
VT	7.33	NM	7.19	
OK	7.19	KS	6.36	
NE	7.06	ID	6.08	
AL	6.11	ME	5.77	
ID	5.82	OK	5.69	
KY	5.80	IA	5.61	
ME	5.57	VT	4.83	
KS	5.21	AL	4.66	
MO	4.64	MN	2.95	
NM	4.19	MO	2.88	
SC	3.36	KY	2.33	
MN	3.34	NC	1.89	
WI	2.47	TN	0.95	
TN	2.06	SC	0.88	
LA	1.53	LA	0.65	
NC	1.20	OR	0.31	
IN	1.05	WI	0.26	**Receiver**
OR	0.45	CO	(0.60)	**Payer**
NV	0.22	TX	(0.65)	
GA	(0.19)	GA	(0.72)	
TX	(0.61)	WA	(0.96)	
AZ	(0.79)	NH	(1.00)	
MI	(1.38)	MI	(1.04)	
VA	(1.51)	IN	(1.05)	
CA	(1.59)	UT	(1.11)	
NH	(1.69)	AZ	(1.27)	
WA	(1.73)	CA	(1.45)	
IL	(1.90)	VA	(1.54)	
CO	(2.00)	FL	(1.60)	
PA	(2.02)	OH	(1.66)	
OH	(2.04)	PA	(1.73)	
HI	(2.15)	IL	(1.76)	
UT	(2.16)	NY	(1.86)	
NY	(2.16)	HI	(1.94)	
FL	(2.17)	RI	(2.08)	
DC	(2.28)	MA	(2.20)	
MD	(2.40)	MD	(2.27)	
MA	(2.41)	DE	(2.47)	
RI	(2.63)	CT	(2.60)	
DE	(2.63)	NJ	(2.75)	
NJ	(2.70)	DC	(4.32)	
CT	(3.04)	NV	(7.06)	

V. Option 1C: Modified Ad Hoc Proposal — Proxy Model Results or "Hold Harmless" with 50% or 40% Interstate

Option 1C: Modified Ad Hoc Proposal — Proxy Model Results or "Hold Harmless" with 50% or 40% Interstate

This option is the same as Option 1A except for two variations:

1. Embedded costs are not used to determine the size or distribution of funds.
2. The size of the fund is controlled by the percentage of support the federal fund would assume. Percentages are shown at 50% and 40%.

This alternative proposal provides support to all states based upon proxy model costs unless the support is lower than the amount of support currently received. The size of the federal (interstate) fund would be controlled by the percentage of support the federal fund would assume. The support is calculated in the same manner as Option 1A with the exception that no support is based upon embedded cost and a lower percentage of support is applied. **Figures 7 and 8** depict the distribution to states and depict the size of the federal fund based upon a federal fund assuming 50% and 40% of the support calculated by the proxy models.

Monthly Surcharges for Option 1C: Modified Ad Hoc Proposal — Proxy Model Results or "Hold Harmless" with 50% Interstate

	Option 1C: Nationwide Surcharge* (%)		**Interstate Fund: Net of 50% Interstate Incremental and "Hold Harmless" (in millions)**
Amount of Benchmark (in dollars)	Average Cost		Average Cost
BCPM	4.1%		$2,948 m
HAI	2.2%		$1,623 m

*This hypothetical surcharge is based on 1996 interstate retail revenues. The benchmark for the proxy models is set at average cost. For BCPM this is $34.20 and for HAI it is $21.38.

Monthly Surcharges for Option 1C: Modified Ad Hoc Proposal — Proxy Model Results or "Hold Harmless" with 40% Interstate

	Option 1C: Nationwide Surcharge* (%)		**Interstate Fund: Net of 40% Interstate Incremental and "Hold Harmless" (in millions)**
Amount of Benchmark (in dollars)	Average Cost		Average Cost
BCPM	3.3%		$2,358 m
HAI	1.8%		$1,299 m

*This hypothetical surcharge is based on 1996 interstate retail revenues. The benchmark for the proxy models is set at average cost. For BCPM this is $34.20 and for HAI it is $21.38.

V. Option 1C: Figure 7

Figure 7: Option 1C: Modified Ad Hoc Proposal — 50% Interstate, Net Payers and Receivers per Access Line per Month, BCPM and HAI

State	BCPM Interstate Average Cost	State	HAI Interstate Average Cost	
AK	NA	AK	NA	
PR	NA	PR	NA	
SD	11.72	SD	18.05	
ND	9.53	ND	18.03	
MT	9.20	MT	17.50	
AR	8.71	WY	9.90	
MS	8.27	NE	8.49	
WV	7.64	WV	6.24	
IA	7.61	MS	6.03	
WY	5.84	AR	5.00	
VT	4.90	NM	4.84	
OK	4.81	KS	4.28	
NE	4.72	ID	4.10	
AL	4.08	ME	3.88	
ID	3.89	OK	3.83	
KY	3.88	IA	3.78	
ME	3.73	VT	3.27	
KS	3.49	AL	3.14	
MO	3.11	MN	2.01	
NM	2.81	MO	1.95	
SC	2.26	KY	1.60	
MN	2.24	NC	1.30	
WI	1.66	TN	0.67	
TN	1.39	SC	0.63	
LA	1.03	OR	0.25	
NC	0.81	WI	0.21	
IN	0.71	LA	0.07	**Receiver**
OR	0.31	CO	(0.35)	**Payer**
NV	0.20	GA	(0.43)	
GA	(0.11)	TX	(0.58)	
TX	(0.39)	NH	(0.61)	
AZ	(0.51)	IN	(0.66)	
MI	(0.91)	UT	(0.70)	
VA	(0.99)	MI	(0.73)	
CA	(1.08)	WA	(0.77)	
NH	(1.11)	AZ	(0.96)	
WA	(1.25)	VA	(0.98)	
IL	(1.27)	CA	(0.98)	
PA	(1.34)	OH	(1.09)	
OH	(1.36)	FL	(1.09)	
HI	(1.42)	PA	(1.13)	
CO	(1.43)	IL	(1.15)	
NY	(1.45)	NY	(1.24)	
FL	(1.47)	HI	(1.26)	
UT	(1.50)	RI	(1.34)	
DC	(1.51)	MA	(1.42)	
MD	(1.58)	MD	(1.47)	
MA	(1.59)	DE	(1.59)	
RI	(1.74)	CT	(1.68)	
DE	(1.74)	NJ	(1.78)	
NJ	(1.79)	DC	(2.79)	
CT	(2.01)	NV	(4.67)	

V. Option 1C: Figure 8

Figure 8: Option 1C: Modified Ad Hoc Proposal — 40% Interstate, Net Payers and Receivers per Access Line per Month, BCPM and HAI

State	BCPM Interstate Average Cost	State	HAI Interstate Average Cost	
AK	NA	AK	NA	
PR	NA	PR	NA	
SD	9.38	SD	14.44	
ND	7.62	ND	14.43	
MT	7.36	MT	14.00	
AR	6.97	WY	7.92	
MS	6.62	NE	6.79	
WV	6.11	WV	5.00	
IA	6.09	MS	4.82	
WY	4.67	AR	4.00	
VT	3.92	NM	3.87	
OK	3.85	KS	3.42	
NE	3.78	ID	3.28	
AL	3.27	ME	3.11	
ID	3.12	OK	3.06	
KY	3.11	IA	3.02	
ME	2.98	VT	2.62	
KS	2.79	AL	2.51	
MO	2.48	MN	1.60	
NM	2.25	MO	1.56	
SC	1.81	KY	1.28	
MN	1.79	NC	1.04	
WI	1.33	TN	0.54	
TN	1.11	SC	0.50	
LA	0.83	OR	0.20	
NC	0.65	WI	0.16	
IN	0.57	LA	0.05	**Receiver**
OR	0.25	CO	(0.28)	**Payer**
NV	0.16	GA	(0.35)	
GA	(0.09)	TX	(0.46)	
TX	(0.32)	NH	(0.49)	
AZ	(0.41)	IN	(0.53)	
MI	(0.73)	UT	(0.56)	
VA	(0.80)	MI	(0.59)	
CA	(0.86)	WA	(0.62)	
NH	(0.89)	AZ	(0.77)	
WA	(1.00)	VA	(0.78)	
IL	(1.02)	CA	(0.78)	
PA	(1.08)	OH	(0.87)	
OH	(1.09)	FL	(0.87)	
HI	(1.14)	PA	(0.90)	
CO	(1.14)	IL	(0.92)	
NY	(1.16)	NY	(0.99)	
FL	(1.18)	HI	(1.00)	
UT	(1.20)	RI	(1.07)	
DC	(1.21)	MA	(1.14)	
MD	(1.27)	MD	(1.17)	
MA	(1.28)	DE	(1.28)	
RI	(1.39)	CT	(1.34)	
DE	(1.39)	NJ	(1.43)	
NJ	(1.43)	DC	(2.23)	
CT	(1.60)	NV	(3.74)	

VI. Option 2: $50 Interstate Benchmark; $30 State Benchmark

Option 2: $50 Interstate Benchmark; $30 State Benchmark

In this option, two benchmarks determine the size and the jurisdiction of the fund. Costs that are above the $50 per line benchmark are funded entirely by the federal jurisdiction (100% interstate). Costs between a $30 and a $50 benchmark are divided between the two jurisdictions: 25% interstate and 75% state. The states are not required to have a fund with this option. If a state elects to fund universal service and adopts the same model and benchmark as the FCC, then the state responsibility would be for 75% of the difference between the two benchmarks.

Option 2 differs from the FCC Plan (Option 4A) in that it increases the interstate support to areas with very high costs for providing local service. Whereas the FCC Plan provides interstate support based on 25% of the costs above the benchmark, in Option 2 the interstate support is 100% when the cost per month is over $50. Option 2 is similar to the FCC's Plan since the support is 25% interstate for those costs between the $30 and $50 benchmarks.

Monthly Surcharges for Option 2: $50 Interstate Benchmark; $30 State Benchmark

	Option 2: Nationwide Surcharge* (%)	**Interstate Fund: 100% above $50 plus 25% ($50 - $30) (in millions)**	**Remaining State Responsibility75% ($50 - $30) (in millions)**
Amount of Benchmarks (in dollars)	$30 and $50	$30 and $50	$30 and $50
BCPM	11.5%	$8,318 m	$3,352 m
HAI	3.5%	$2,556 m	$1,072 m

*This hypothetical surcharge per access line is based on 1996 interstate retail revenues. This surcharge is for comparison purposes only. Actual collection is through service rates. The federal surcharge is the sum of costs above $50 and 25% of the difference between the $30 benchmark and the $50 benchmark. The remaining state amount is 75% of the difference between the two benchmarks.

The above chart contains hypothetical nationwide surcharges that, under Option 2, would generate percentages of interstate support calculated by results from the two proxy models (BCPM and HAI) at the $30 and $50 benchmarks. The data is the sum of the 1998 calculated rural amounts **(Figure 2)** for the high cost fund and results from the proxy models (BCPM and HAI) for the three benchmark levels. This surcharge is the interstate fund generated from each model for a given benchmark divided by 1996 interstate retail revenues. The surcharge is for comparison purposes only.

Figure 9 provides the distribution to the states of the federal (interstate) fund and **Figure 10** shows the remaining state responsibility.

VI. Option 2: Figure 9

Figure 9: Option 2: $50 Interstate Benchmark; $30 State Benchmark, Net Payers and Receivers per Access Line per Month, BCPM and HAI

State	BCPM Interstate $30 and $50	State	HAI Interstate $30 and $50	
WY	$16.40	AK	$12.66	
MT	$14.44	MT	$7.94	
WV	$12.45	WY	$6.66	
MS	$12.14	ND	$4.82	
SD	$10.10	SD	$4.13	
AK	$9.21	AR	$3.80	
ND	$7.75	NE	$3.11	
ID	$7.57	KS	$2.93	
NE	$7.43	OK	$2.89	
AR	$6.83	MS	$2.77	
OK	$6.17	LA	$2.71	
KS	$5.91	ID	$2.54	
NV	$5.60	WV	$2.46	
MO	$4.83	NM	$2.02	
LA	$4.66	VT	$1.92	
NM	$4.65	ME	$1.82	
AL	$4.50	MO	$1.64	
IA	$4.37	MN	$1.28	
VT	$4.30	IA	$1.23	
MN	$3.74	AL	$1.04	
ME	$3.69	NV	$0.88	
KY	$3.47	OR	$0.68	
TX	$2.50	WI	$0.60	
WI	$1.79	CO	$0.60	
IN	$1.29	TX	$0.57	
OR	$1.25	SC	$0.34	
SC	$0.43	KY	$0.25	**Receiver**
TN	$0.26	GA	($0.02)	**Payer**
MI	$0.25	NC	($0.08)	
NC	$0.17	WA	($0.10)	
WA	$0.03	AZ	($0.14)	
CO	($0.40)	IN	($0.16)	
VA	($0.43)	UT	($0.18)	
IL	($0.65)	TN	($0.18)	
OH	($0.67)	MI	($0.24)	
GA	($0.73)	HI	($0.32)	
NH	($1.22)	VA	($0.35)	
PA	($1.46)	IL	($0.45)	
AZ	($1.57)	NH	($0.52)	
PR	($1.57)	CA	($0.61)	
CA	($1.69)	OH	($0.65)	
UT	($2.17)	PA	($0.65)	
HI	($2.54)	PR	($0.74)	
NY	($2.63)	NY	($0.76)	
FL	($3.17)	FL	($1.03)	
MD	($3.58)	MD	($1.23)	
MA	($3.66)	MA	($1.24)	
DE	($3.74)	DC	($1.34)	
RI	($4.21)	NJ	($1.47)	
DC	($4.37)	RI	($1.47)	
CT	($4.54)	DE	($1.50)	
NJ	($4.95)	CT	($1.55)	

VI. Option 2: Figure 10

Figure 10: Option 2: $50 Interstate Benchmark; $30 State Benchmark, Remaining State Responsibility per Access Line per Month, BCPM and HAI

State	BCPM State $30 and $50	State	HAI State $30 and $50
WV	$6.03	MS	$2.58
MS	$5.56	WV	$2.44
AL	$3.93	NE	$2.05
VT	$3.79	VT	$1.90
KY	$3.37	AL	$1.49
NC	$3.34	ME	$1.48
ME	$3.04	NH	$1.34
AR	$2.98	KY	$1.33
LA	$2.84	MO	$1.31
OK	$2.76	ID	$1.26
SC	$2.70	NM	$1.19
TN	$2.70	NC	$1.19
ID	$2.67	WY	$1.11
IN	$2.65	VA	$1.10
WY	$2.50	OK	$0.97
MO	$2.48	MT	$0.91
NH	$2.47	MN	$0.87
NM	$2.42	IN	$0.81
VA	$2.28	IA	$0.80
MT	$2.28	HI	$0.78
AZ	$2.09	SD	$0.76
OH	$2.09	TN	$0.72
IA	$2.06	KS	$0.70
PR	$2.05	ND	$0.65
GA	$2.02	AR	$0.65
NV	$1.94	PA	$0.63
MN	$1.91	TX	$0.63
TX	$1.89	CO	$0.62
NE	$1.74	OH	$0.58
OR	$1.74	OR	$0.55
PA	$1.72	Nationwide Avg.	$0.54
MI	$1.72	WI	$0.49
Nationwide Avg.	$1.68	SC	$0.47
SD	$1.68	GA	$0.45
WI	$1.65	WA	$0.45
KS	$1.64	NY	$0.44
WA	$1.64	MI	$0.42
DE	$1.62	IL	$0.42
CT	$1.54	DE	$0.35
CO	$1.46	UT	$0.31
RI	$1.33	AZ	$0.30
IL	$1.17	MD	$0.30
FL	$1.10	FL	$0.21
MD	$1.10	CT	$0.19
HI	$1.09	MA	$0.11
UT	$1.06	CA	$0.11
ND	$1.04	RI	$0.10
NY	$0.88	LA	$0.09
MA	$0.78	PR	$0.07
CA	$0.62	AK	$0.04
NJ	$0.40	DC	$0.00
AK	$0.27	NJ	($0.07)
DC	$0.01	NV	($0.18)

VII. Option 3: Density Zones

Option 3: Density Zones

This option targets federal funds for the least populated areas of the country where costs are highest and where competition will probably develop more slowly, if at all. The average state cost per line for the lowest density zone, 0 to 5 lines per square mile, is two to four times the next density zone, 5 to 100 lines per square mile. The average state cost per line for the lowest density zone is 4 to 10 times the nationwide average cost per line for the non-rural companies.[24] This option assumes that 100% of the support for the non-rural companies will be provided by the federal fund above the $30 benchmark.

The level of support is developed by calculating the support from the proxy models in the lowest geographic density zone with a $30 benchmark. This produces a federal fund size of $2.6 billion for BCPM and $1.05 billion for HAI for the non-rural companies. **Figure 11** depicts the distribution to the states of a federal (interstate) fund that provides support to only the lowest density zone. **Figure 12** shows the remaining state responsibility.

Monthly Surcharges for Option 3: Density Zones

	Option 3: Nationwide Surcharge* (%)		**Interstate Fund (in millions)**		**Remaining State Responsibility (in millions)**
Amount of Benchmark (in dollars)	Zone 1 $30		Zone 1 $30		Zone 1 $30
BCPM	5.5%		$3,965 m		$7,704 m
HAI	3.3%		$2,410 m		$1,866 m

*This hypothetical surcharge is based on 1996 interstate retail revenues.

The above chart contains hypothetical nationwide surcharges that, under Option 3, would generate percentages of interstate support calculated by results from the two proxy models (BCPM and HAI) at the $30 benchmark. The data is the sum of the 1998 calculated rural amounts **(Figure 2)** for the high cost fund and results from the proxy models (BCPM and HAI) for the $30 benchmark. This surcharge is the interstate fund generated from each model for a given benchmark divided by 1996 interstate retail revenues. The surcharge is for comparison purposes only.

The next size density zone calculated by the models is 5 to 100 lines per square miles. The cost in this zone are not as extreme as in the lowest density zone.[25] If the federal fund were to provide support for the non-rural companies above the $30 benchmark for the two lowest zones, 0 to 5 and 5 to 100 lines per square miles, this would increase the federal fund 312% for BCPM and 277% for HAI.

VII. Option 3: Figure 11

Figure 11: Option 3: Density Zones, Net Payers and Receivers per Access Line per Month, BCPM and HAI

State	BCPM Interstate Zone 1, $30	State	HAI Interstate Zone 1, $30	
WY	$16.71	AK	$12.53	
MT	$14.69	WY	$11.24	
AK	$11.57	MT	$9.20	
SD	$11.19	ND	$6.76	
ND	$9.95	SD	$6.33	
NE	$8.38	NE	$5.02	
KS	$6.89	KS	$4.17	
ID	$6.53	AR	$4.08	
AR	$5.30	NM	$3.77	
NM	$5.19	ID	$3.38	
MS	$4.94	OK	$3.25	
OK	$4.72	MS	$2.62	
IA	$4.45	LA	$1.94	
MN	$3.02	IA	$1.79	
MO	$2.61	MN	$1.60	
WV	$2.57	ME	$1.36	
TX	$2.03	MO	$1.35	
LA	$1.88	CO	$1.14	
OR	$1.66	OR	$1.07	
AL	$1.36	WV	$0.93	
CO	$0.94	VT	$0.90	
ME	$0.91	TX	$0.85	
WA	$0.69	AL	$0.78	
WI	$0.52	WI	$0.59	
VT	$0.35	SC	$0.41	
SC	$0.04	NV	$0.38	
KY	$0.03	WA	$0.21	
IL	($0.12)	UT	$0.07	
GA	($0.26)	GA	$0.04	**Receiver**
AZ	($0.36)	AZ	($0.02)	**Payer**
UT	($0.49)	KY	($0.27)	
NV	($0.53)	MI	($0.29)	
TN	($0.70)	TN	($0.39)	
MI	($0.72)	HI	($0.45)	
IN	($0.75)	NH	($0.50)	
CA	($0.76)	CA	($0.55)	
NC	($1.10)	IL	($0.56)	
PR	($1.17)	NC	($0.62)	
HI	($1.39)	IN	($0.63)	
VA	($1.48)	PR	($0.68)	
PA	($1.49)	PA	($0.86)	
OH	($1.50)	NY	($0.91)	
NH	($1.50)	OH	($0.94)	
FL	($1.61)	FL	($0.95)	
NY	($1.65)	VA	($1.07)	
MA	($1.99)	MA	($1.23)	
DC	($2.08)	DC	($1.27)	
MD	($2.10)	MD	($1.29)	
RI	($2.33)	RI	($1.42)	
NJ	($2.43)	NJ	($1.48)	
DE	($2.48)	DE	($1.49)	
CT	($2.53)	CT	($1.53)	

VII. Option 3: Figure 12

Figure 12: Option 3: Density Zones, Remaining State Responsibility per Access Line per Month, BCPM and HAI

State	BCPM State Zone 1, $30	State	HAI State Zone 1, $30
WV	$18.24	MS	$5.06
MS	$15.10	WV	$5.05
NV	$11.11	VT	$3.51
VT	$10.73	AL	$3.13
KY	$9.30	NC	$2.65
AL	$9.20	ME	$2.49
ME	$8.08	MO	$2.37
LA	$7.70	KY	$2.26
NC	$6.86	VA	$2.08
MO	$6.80	TN	$1.84
AR	$6.76	IN	$1.70
IN	$6.66	NH	$1.63
ID	$6.57	OK	$1.63
OK	$6.34	MN	$1.44
TN	$5.92	LA	$1.39
NH	$5.91	ID	$1.37
VA	$5.86	NE	$1.32
SC	$5.55	AR	$1.20
WY	$5.39	SC	$1.16
OH	$4.99	OH	$1.15
NM	$4.83	PA	$1.06
MN	$4.80	GA	$1.05
MT	$4.76	IA	$1.03
WI	$4.75	WI	$0.98
MI	$4.34	Nationwide Avg.	$0.94
IA	$4.26	OR	$0.93
TX	$4.25	MI	$0.85
GA	$4.18	TX	$0.81
Nationwide Avg.	$3.86	NY	$0.78
PA	$3.83	IL	$0.68
OR	$3.75	CO	$0.65
AZ	$3.66	WY	$0.57
SD	$3.45	MD	$0.56
WA	$3.36	NM	$0.56
NE	$3.16	WA	$0.51
DE	$3.13	MT	$0.51
CO	$2.96	CT	$0.48
KS	$2.96	KS	$0.48
PR	$2.95	DE	$0.40
IL	$2.62	PR	$0.37
CT	$2.39	AZ	$0.31
NY	$2.12	FL	$0.27
HI	$2.09	UT	$0.25
MD	$2.03	ND	$0.22
RI	$2.02	MA	$0.21
UT	$1.97	SD	$0.16
FL	$1.91	HI	$0.15
ND	$1.71	NV	$0.15
CA	$1.37	RI	$0.15
MA	$1.34	AK	$0.11
NJ	$0.60	CA	$0.11
AK	$0.48	NJ	$0.07
DC	$0.01	DC	$0.00

VIII. Option 4A: FCC Plan: 25% Interstate/ 75% State

Option 4A: FCC Plan: 25% Interstate/75% State

This is the current FCC plan for the non-rural portion of the high cost fund. (For a cash flow diagram of the FCC's plan, see **Section XIII**).[26] The FCC funds only the interstate portion and the states fund the remainder. The FCC described this plan as follows:

> Beginning on January 1, 1999, the Commission will modify universal service assessments to fund 25 percent of the difference between cost of service defined by the applicable forward-looking economic cost method less the national benchmark, through a percentage contribution on interstate end-user telecommunications revenues.[27]

The FCC's plan assesses the federal contribution to the high cost fund (25% of the total requirement identified by the FCC) on interstate retail revenues. The plan also allows for an adjustment to interstate access to reflect the net of the following:

1. Increases in interstate access to recover payments made by the LECs into the fund for high-cost areas/low-income households, schools and libraries, and rural health care subsidy requirements; and

2. Decreases in interstate access to reflect support received by the LECs from the fund for their high-cost areas.

Monthly Surcharges for Option 4A: FCC Plan: 25% Interstate/75% State

	Option 4A: Nationwide Surcharge* (%)			Interstate Fund (in millions)			Remaining State Responsibility (in millions)		
Amount of Benchmark (in dollars)	$30	$40	$50	$30	$40	$50	$30	$40	$50
BCPM	5.5%	4.2%	3.9%	$3,938 m	$3,063 m	$2,820 m	$7,732 m	$5,109 m	$4,380 m
HAI	2.7%	2.3%	2.2%	$1,927 m	$1,693 m	$1,570 m	$1,701 m	$999 m	$629 m

*This hypothetical surcharge is based on 25% of 1996 interstate retail revenues. This surcharge is for comparison purposes only. Actual collection is through service rates.

The above chart contains nationwide surcharges that, under the FCC's Plan, would generate 25% of the support calculated by the two proxy models (BCPM and HAI) at the three benchmarks. The data is the sum of the 1998 calculated rural amounts **(Figure 2)** for the high cost fund and results from the proxy models (BCPM and HAI) for the three benchmark levels. This surcharge is the interstate fund generated from each model for a given benchmark divided by 1995 interstate retail revenues. The surcharge is for comparison purposes only. Actual collection is through service rates.

Figures 13 and 14 illustrate the option proposed by the FCC's May 8, 1997 *Universal Service Order*, to fund 25% of the necessary support for high-cost non-rural providers.[28] The monthly per line amount for each state is calculated by subtracting from the interstate subsidy for this state the product of the interstate surcharge on retail revenues times the interstate retail revenues for this state. This result is then divided by the number of access lines (USF loops) in the state and by twelve months to produce payers and receivers on a per line basis.

Figures 15 and 16 demonstrate the per month per line amount for each state that would be needed should a state determine it is necessary to fund the remaining 75% of the amounts determined by the model of the FCC's plan. The monthly per line amount for each state is calculated by dividing the remaining amount of the subsidy (total minus 25% interstate) in each state by the number of access lines in the state and by twelve months. Also illustrated are the nationwide average state payment amounts for each of the three benchmarks.

VIII. Option 4A: Figure 13

Figure 13: Option 4A: FCC Plan: 25% Interstate/75% State, Net Payers and Receivers per Access Line per Month, BCPM

State	BCPM Interstate $30	State	BCPM Interstate $40	State	BCPM Interstate $50	
AK	$11.68	AK	$12.11	AK	$12.24	
MT	$8.45	MT	$8.48	MT	$8.39	
WY	$7.47	WY	$7.55	WY	$7.46	
WV	$4.90	ND	$4.98	ND	$5.02	
SD	$4.66	SD	$4.88	SD	$4.83	
ND	$4.63	AR	$4.38	AR	$4.16	
AR	$4.58	WV	$4.16	WV	$3.48	
MS	$4.34	MS	$3.69	KS	$3.31	
KS	$3.27	ID	$3.53	MS	$3.08	
OK	$3.26	KS	$3.38	ID	$2.93	
ID	$3.08	OK	$3.08	OK	$2.89	
NM	$2.81	NM	$2.84	NM	$2.76	
LA	$2.67	NE	$2.70	NE	$2.64	
NE	$2.61	LA	$2.26	LA	$2.26	
VT	$2.40	VT	$2.25	VT	$1.91	
ME	$2.02	ME	$1.85	IA	$1.74	
AL	$1.93	IA	$1.85	ME	$1.58	
IA	$1.84	MO	$1.64	MO	$1.44	
MO	$1.73	AL	$1.51	MN	$1.21	
KY	$1.33	MN	$1.32	NV	$1.21	
MN	$1.30	NV	$1.23	AL	$1.16	
WI	$1.08	KY	$1.15	WI	$1.00	
NV	$1.08	WI	$1.10	OR	$0.93	
SC	$0.90	OR	$0.99	KY	$0.85	
OR	$0.89	TX	$0.77	TX	$0.67	
TX	$0.82	SC	$0.64	SC	$0.63	
IN	$0.45	CO	$0.31	CO	$0.33	
TN	$0.32	IN	$0.28	IN	$0.08	
NC	$0.25	TN	$0.18	GA	$0.04	**Receiver**
MI	$0.10	GA	$0.11	TN	($0.00)	**Payer**
CO	$0.09	MI	$0.06	MI	($0.05)	
GA	$0.04	NC	($0.03)	WA	($0.16)	
WA	($0.22)	WA	($0.13)	NC	($0.28)	
NH	($0.37)	NH	($0.29)	NH	($0.39)	
OH	($0.38)	AZ	($0.30)	AZ	($0.40)	
AZ	($0.41)	OH	($0.43)	IL	($0.41)	
VA	($0.43)	UT	($0.62)	VA	($0.55)	
PR	($0.44)	PA	($0.65)	OH	($0.55)	
IL	($0.53)	CA	($0.66)	UT	($0.56)	
PA	($0.68)	PR	($0.76)	CA	($0.63)	
CA	($0.85)	NY	($0.95)	PA	($0.72)	
UT	($0.87)	HI	($1.09)	PR	($0.79)	
NY	($1.20)	IL	($1.12)	NY	($0.92)	
HI	($1.26)	FL	($1.20)	HI	($1.07)	
FL	($1.39)	MD	($1.42)	FL	($1.16)	
MD	($1.64)	MA	($1.42)	MA	($1.35)	
MA	($1.67)	VA	($1.47)	MD	($1.39)	
DE	($1.71)	DE	($1.50)	DC	($1.48)	
RI	($1.82)	DC	($1.61)	DE	($1.54)	
CT	($1.93)	RI	($1.64)	RI	($1.60)	
DC	($2.07)	CT	($1.75)	CT	($1.71)	
NJ	($2.29)	NJ	($1.85)	NJ	($1.72)	

VIII. Option 4A: Figure 14

Figure 14: Option 4A: FCC Plan: 25% Interstate/75% State, Net Payers and Receivers per Access Line per Month, HAI

State	HAI Interstate $30	State	HAI Interstate $40	State	HAI Interstate $50	
AK	$12.82	AK	$12.95	AK	$13.01	
MT	$6.84	MT	$6.80	MT	$6.76	
WY	$5.11	WY	$5.05	WY	$5.00	
ND	$4.17	ND	$4.21	ND	$4.19	
AR	$3.53	AR	$3.51	AR	$3.50	
SD	$3.31	SD	$3.31	SD	$3.29	
KS	$2.59	KS	$2.57	KS	$2.54	
OK	$2.27	NM	$2.22	OK	$2.12	
NM	$2.23	OK	$2.17	NM	$2.07	
NE	$1.91	NE	$1.79	LA	$1.91	
ID	$1.85	ID	$1.75	ID	$1.66	
WV	$1.81	LA	$1.69	NE	$1.43	
LA	$1.77	VT	$1.50	VT	$1.35	
VT	$1.73	WV	$1.45	WV	$1.18	
MS	$1.55	ME	$1.25	ME	$1.15	
ME	$1.46	MS	$1.15	IA	$0.97	
IA	$1.04	IA	$1.00	MS	$0.89	
MO	$0.92	OR	$0.78	OR	$0.78	
OR	$0.77	MO	$0.76	WI	$0.72	
WI	$0.73	WI	$0.71	SC	$0.68	
AL	$0.73	SC	$0.65	MO	$0.65	
MN	$0.71	MN	$0.65	MN	$0.59	
SC	$0.64	AL	$0.52	CO	$0.53	
CO	$0.50	CO	$0.52	AL	$0.40	
KY	$0.35	TX	$0.24	GA	$0.24	
TX	$0.27	GA	$0.21	TX	$0.21	
GA	$0.17	KY	$0.19	KY	$0.11	
TN	$0.01	TN	($0.03)	NV	$0.07	**Receiver**
NC	($0.06)	AZ	($0.06)	AZ	($0.01)	**Payer**
NH	($0.07)	NH	($0.12)	TN	($0.04)	
IN	($0.11)	NV	($0.13)	UT	($0.11)	
MI	($0.13)	MI	($0.14)	MI	($0.13)	
AZ	($0.14)	UT	($0.15)	WA	($0.20)	
UT	($0.22)	IN	($0.18)	IN	($0.22)	
NV	($0.24)	NC	($0.20)	NH	($0.25)	
WA	($0.24)	WA	($0.21)	NC	($0.27)	
VA	($0.38)	IL	($0.39)	IL	($0.39)	
IL	($0.41)	CA	($0.42)	CA	($0.39)	
PA	($0.48)	VA	($0.47)	PR	($0.47)	
OH	($0.49)	PR	($0.50)	OH	($0.51)	
CA	($0.49)	PA	($0.50)	NY	($0.51)	
HI	($0.50)	NY	($0.51)	PA	($0.52)	
NY	($0.55)	OH	($0.52)	VA	($0.54)	
PR	($0.55)	HI	($0.53)	HI	($0.58)	
FL	($0.78)	FL	($0.69)	FL	($0.65)	
MD	($0.93)	MA	($0.84)	MA	($0.79)	
MA	($0.94)	MD	($0.88)	DC	($0.83)	
DC	($1.01)	DC	($0.89)	MD	($0.84)	
RI	($1.10)	RI	($1.00)	RI	($0.93)	
DE	($1.11)	CT	($1.04)	NJ	($0.93)	
CT	($1.14)	NJ	($1.04)	CT	($0.97)	
NJ	($1.18)	DE	($1.06)	DE	($1.00)	

VIII. Option 4A: Figure 15

Figure 15: Option 4A: FCC Plan: 25% Interstate/75% State, Remaining State Responsibility per Access Line per Month, BCPM

State	BCPM State	State	BCPM State	State	BCPM State
	$30		**$40**		**$50**
WV	$15.93	WY	$12.97	WY	$12.15
MS	$15.72	MS	$12.37	MS	$10.16
WY	$14.65	WV	$12.30	WV	$9.89
MT	$11.02	ID	$9.64	MT	$8.74
ID	$10.03	MT	$9.47	SD	$8.32
SD	$10.00	SD	$8.92	NV	$7.59
NV	$9.53	NV	$8.15	ID	$7.36
NE	$8.94	NE	$7.79	NE	$7.20
VT	$8.70	VT	$6.42	ND	$6.00
AL	$8.65	ND	$6.38	MO	$5.22
KY	$8.02	MO	$6.15	OK	$5.05
OK	$7.81	AL	$6.14	KS	$4.96
MO	$7.70	OK	$5.98	VT	$4.91
AR	$7.49	KY	$5.97	IA	$4.82
NM	$7.22	KS	$5.56	NM	$4.80
ND	$7.04	NM	$5.55	AL	$4.72
ME	$6.98	AR	$5.55	KY	$4.66
LA	$6.93	IA	$5.51	MN	$4.63
IA	$6.88	MN	$5.31	AR	$4.51
KS	$6.60	ME	$5.10	LA	$4.08
MN	$6.54	LA	$4.42	ME	$3.93
NC	$5.53	TX	$4.21	TX	$3.59
TX	$5.48	IN	$3.75	IN	$2.82
IN	$5.47	OR	$3.37	OR	$2.80
TN	$4.91	NC	$3.34	WA	$2.65
VA	$4.83	WI	$3.15	WI	$2.55
NH	$4.80	NH	$3.15	VA	$2.55
SC	$4.70	WA	$3.14	CO	$2.37
OR	$4.54	TN	$3.13	NH	$2.33
WA	$4.29	CO	$2.79	TN	$2.21
WI	$4.20	Nationwide Avg.	$2.56	Nationwide Avg.	$2.20
GA	$3.89	GA	$2.52	NC	$2.19
OH	$3.89	OH	$2.50	SC	$2.00
Nationwide Avg.	$3.88	SC	$2.45	GA	$1.87
CO	$3.83	MI	$2.40	IL	$1.87
AZ	$3.73	AZ	$2.39	MI	$1.80
MI	$3.52	PA	$1.90	OH	$1.80
PA	$3.04	UT	$1.58	AZ	$1.64
IL	$3.04	DE	$1.33	PA	$1.32
DE	$2.38	HI	$1.20	UT	$1.31
UT	$2.37	NY	$1.11	HI	$0.88
PR	$2.22	CA	$1.04	CA	$0.85
HI	$1.97	FL	$0.86	NY	$0.81
CT	$1.81	MD	$0.80	DE	$0.76
FL	$1.71	CT	$0.62	FL	$0.61
NY	$1.68	RI	$0.49	MD	$0.48
MD	$1.59	PR	$0.48	CT	$0.27
RI	$1.52	MA	$0.42	MA	$0.25
CA	$1.47	VA	$0.19	RI	$0.19
MA	$1.03	AK	$0.15	PR	$0.17
NJ	$0.47	NJ	$0.14	AK	$0.11
AK	$0.38	IL	$0.06	NJ	$0.07
DC	$0.01	DC	$0.00	DC	$0.00

VIII. Option 4A: Figure 16

Figure 16: Option 4A FCC Plan: 25% Interstate/75% State, Remaining State Responsibility per Access Line per Month, HAI

State	HAI Interstate $30	State	HAI Interstate $40	State	HAI Interstate $50
MS	$4.41	NE	$3.45	WY	$2.42
NE	$4.38	WY	$2.92	MT	$2.17
WV	$4.12	MS	$2.72	NE	$1.87
WY	$3.76	MT	$2.68	SD	$1.85
MT	$3.49	WV	$2.37	ND	$1.72
SD	$3.00	SD	$2.27	NV	$1.67
VT	$2.98	ND	$2.20	MS	$1.66
ND	$2.77	ID	$1.86	LA	$1.33
ID	$2.75	MO	$1.66	ID	$1.28
ME	$2.67	VT	$1.58	WV	$1.19
MO	$2.51	ME	$1.43	MO	$1.11
AL	$2.31	OK	$1.41	OK	$1.04
OK	$2.15	MN	$1.40	MN	$1.01
MN	$2.00	NV	$1.31	AR	$0.86
KY	$1.83	AL	$1.26	ME	$0.85
AR	$1.80	AR	$1.18	KS	$0.80
IA	$1.78	KS	$1.15	VT	$0.74
NM	$1.65	IA	$1.11	IA	$0.70
KS	$1.64	NM	$1.06	AL	$0.68
NC	$1.60	TX	$0.85	TX	$0.60
VA	$1.55	VA	$0.85	CO	$0.53
NV	$1.48	HI	$0.83	WA	$0.52
LA	$1.43	KY	$0.82	HI	$0.49
NH	$1.43	LA	$0.80	UT	$0.44
HI	$1.27	CO	$0.75	AZ	$0.43
TX	$1.25	NC	$0.75	VA	$0.41
CO	$1.18	NH	$0.71	Nationwide Avg.	$0.33
IN	$1.10	WA	$0.70	NC	$0.32
WA	$1.01	UT	$0.55	KY	$0.30
TN	$0.97	IN	$0.55	OR	$0.30
OR	$0.93	AZ	$0.54	NM	$0.25
Nationwide Avg.	$0.91	Nationwide Avg.	$0.53	IL	$0.25
PA	$0.80	OR	$0.52	IN	$0.25
UT	$0.77	TN	$0.42	GA	$0.21
WI	$0.76	IL	$0.42	AK	$0.21
AZ	$0.75	PA	$0.38	WI	$0.16
OH	$0.73	GA	$0.37	TN	$0.15
GA	$0.72	WI	$0.34	OH	$0.14
SC	$0.71	NY	$0.32	PA	$0.14
IL	$0.68	OH	$0.30	MI	$0.13
MI	$0.58	MI	$0.25	CA	$0.12
NY	$0.57	AK	$0.23	NY	$0.11
DE	$0.36	SC	$0.22	NJ	$0.10
MD	$0.36	CA	$0.16	FL	$0.09
FL	$0.30	FL	$0.16	SC	$0.07
AK	$0.25	MD	$0.13	MD	$0.06
CA	$0.23	DE	$0.06	MA	$0.02
CT	$0.20	MA	$0.05	DE	$0.01
MA	$0.13	CT	$0.04	CT	$0.01
RI	$0.10	PR	$0.02	NH	$0.01
PR	$0.07	RI	$0.01	RI	$0.00
NJ	$0.03	NJ	$0.01	PR	$0.00
DC	$0.00	DC	$0.00	DC	$0.00

IX. Option 4B: Modified FCC Plan: 40% Interstate/60% State

Option 4B: Modified FCC Plan: 40% Interstate/60% State

This option shows the impact on the FCC Plan of increasing the interstate (federal) responsibility for the high cost fund from 25% to 40%. The remaining potential state responsibility is decreased from 75% to 60%. All other calculations for this model are identical to those for the FCC's Plan, Option 4A.

Figures 17 and 18 show the distribution to the states of the interstate fund and **Figures 19 and 20** show the remaining state responsibility.

Monthly Surcharges for Option 4B: Modified FCC Plan: 40% Interstate/60% State

	Option 4B: Nationwide Surcharge* (%)			**Interstate Fund (in millions)**			**Remaining State Responsibility (in millions)**		
Amount of Benchmark (in dollars)	$30	$40	$50	$30	$40	$50	$30	$40	$50
BCPM	7.6%	5.7%	5.1%	$5,484 m	$4,085 m	$3,696 m	$6,186 m	$4,087 m	$3,504 m
HAI	3.1%	2.6%	2.3%	$2,267 m	$1,893 m	$1,695 m	$1,361 m	$799 m	$503 m

*This hypothetical surcharge is based on 40% of 1996 interstate retail revenues. This surcharge is for comparison purposes only. Actual collection is through service rates.

IX. Option 4B: Figure 17

Figure 17: Option 4B: Modified FCC Plan: 40% Interstate/60% State, Net Payers and Receivers per Access Line per Month, BCPM

State	BCPM Interstate	State	BCPM Interstate	State	BCPM Interstate	
	$30		**$40**		**$50**	
AK	$10.84	AK	$11.54	AK	$11.75	
MT	$9.68	MT	$9.73	MT	$9.59	
WY	$9.26	WY	$9.39	WY	$9.24	
WV	$7.26	WV	$6.07	SD	$5.92	
MS	$6.65	SD	$5.99	ND	$5.64	
SD	$5.64	MS	$5.62	WV	$4.99	
AR	$5.28	ND	$5.59	MS	$4.65	
ND	$5.02	AR	$4.96	AR	$4.61	
ID	$4.08	ID	$4.79	KS	$3.84	
OK	$4.07	KS	$3.95	ID	$3.82	
KS	$3.77	OK	$3.77	NE	$3.60	
NE	$3.56	NE	$3.71	OK	$3.47	
LA	$3.32	NM	$3.26	NM	$3.13	
NM	$3.21	VT	$2.83	LA	$2.66	
VT	$3.08	LA	$2.65	VT	$2.29	
AL	$2.90	IA	$2.41	IA	$2.25	
ME	$2.62	MO	$2.37	NV	$2.12	
MO	$2.52	ME	$2.34	MO	$2.06	
IA	$2.41	AL	$2.24	ME	$1.92	
KY	$2.05	NV	$2.14	MN	$1.70	
NV	$1.90	MN	$1.87	AL	$1.68	
MN	$1.83	KY	$1.76	KY	$1.28	
WI	$1.27	WI	$1.30	WI	$1.14	
TX	$1.24	TX	$1.17	TX	$1.01	
SC	$0.97	OR	$1.09	OR	$1.00	
OR	$0.94	IN	$0.56	SC	$0.53	
IN	$0.85	SC	$0.55	CO	$0.24	
NC	$0.56	TN	$0.28	IN	$0.24	**Receiver**
TN	$0.50	CO	$0.20	TN	($0.01)	**Payer**
MI	$0.22	MI	$0.15	MI	($0.02)	
GA	($0.12)	NC	$0.11	GA	($0.11)	
CO	($0.15)	GA	($0.00)	WA	($0.11)	
WA	($0.21)	WA	($0.06)	NC	($0.30)	
OH	($0.34)	NH	($0.40)	IL	($0.44)	
VA	($0.36)	OH	($0.41)	VA	($0.55)	
PR	($0.46)	AZ	($0.48)	NH	($0.56)	
NH	($0.53)	PA	($0.76)	OH	($0.61)	
IL	($0.62)	CA	($0.85)	AZ	($0.63)	
AZ	($0.65)	UT	($0.91)	CA	($0.80)	
PA	($0.82)	PR	($0.97)	UT	($0.82)	
CA	($1.15)	NY	($1.25)	PA	($0.88)	
UT	($1.32)	HI	($1.35)	PR	($1.01)	
HI	($1.63)	IL	($1.57)	NY	($1.21)	
NY	($1.65)	FL	($1.59)	HI	($1.33)	
FL	($1.89)	MD	($1.82)	FL	($1.51)	
MD	($2.18)	MA	($1.86)	MA	($1.75)	
DE	($2.22)	DE	($1.89)	MD	($1.77)	
MA	($2.25)	VA	($2.03)	DC	($1.94)	
RI	($2.43)	DC	($2.15)	DE	($1.95)	
CT	($2.58)	RI	($2.15)	RI	($2.08)	
DC	($2.88)	CT	($2.30)	CT	($2.23)	
NJ	($3.16)	NJ	($2.46)	NJ	($2.26)	

IX. Option 4B: Figure 18

Figure 18: Option 4B: Modified FCC Plan: 40% Interstate/60% State, Net Payers and Receivers per Access Line per Month, HAI

State	HAI Interstate $30	State	HAI Interstate $40	State	HAI Interstate $50	
AK	$12.66	AK	$12.88	AK	$12.98	
MT	$7.11	MT	$7.04	MT	$6.98	
WY	$5.48	WY	$5.38	WY	$5.31	
ND	$4.29	ND	$4.35	ND	$4.32	
AR	$3.61	AR	$3.57	AR	$3.55	
SD	$3.49	SD	$3.48	SD	$3.46	
KS	$2.68	KS	$2.66	KS	$2.61	
OK	$2.49	OK	$2.32	OK	$2.25	
NE	$2.45	NM	$2.26	LA	$2.10	
WV	$2.31	NE	$2.24	NM	$2.03	
NM	$2.28	ID	$1.94	ID	$1.80	
MS	$2.20	LA	$1.74	NE	$1.66	
ID	$2.10	WV	$1.73	VT	$1.38	
VT	$2.00	VT	$1.63	WV	$1.31	
LA	$1.87	MS	$1.55	ME	$1.22	
ME	$1.72	ME	$1.37	MS	$1.13	
MO	$1.22	IA	$1.06	IA	$1.00	
IA	$1.13	MO	$0.98	MO	$0.80	
AL	$0.98	MN	$0.79	OR	$0.76	
MN	$0.89	OR	$0.76	MN	$0.71	
OR	$0.74	WI	$0.69	WI	$0.69	
WI	$0.71	AL	$0.65	SC	$0.62	
SC	$0.55	SC	$0.57	CO	$0.55	
CO	$0.50	CO	$0.53	AL	$0.47	
KY	$0.47	TX	$0.31	NV	$0.29	
TX	$0.36	KY	$0.21	TX	$0.27	
GA	$0.09	GA	$0.16	GA	$0.20	
NC	$0.07	NV	($0.02)	KY	$0.09	**Receiver**
TN	$0.00	TN	($0.06)	AZ	($0.01)	**Payer**
IN	($0.05)	AZ	($0.08)	TN	($0.08)	
NH	($0.05)	NH	($0.13)	UT	($0.11)	
MI	($0.15)	NC	($0.16)	MI	($0.16)	
NV	($0.20)	IN	($0.17)	WA	($0.17)	
AZ	($0.22)	MI	($0.17)	IN	($0.23)	
WA	($0.24)	UT	($0.17)	NC	($0.27)	
UT	($0.28)	WA	($0.19)	NH	($0.34)	
VA	($0.28)	IL	($0.40)	IL	($0.39)	
HI	($0.41)	VA	($0.42)	CA	($0.41)	
IL	($0.43)	HI	($0.46)	PR	($0.51)	
PA	($0.49)	CA	($0.47)	VA	($0.53)	
OH	($0.51)	PA	($0.53)	OH	($0.54)	
CA	($0.58)	NY	($0.55)	HI	($0.55)	
NY	($0.61)	OH	($0.55)	PA	($0.55)	
PR	($0.64)	PR	($0.56)	NY	($0.56)	
FL	($0.90)	FL	($0.77)	FL	($0.70)	
MD	($1.05)	MA	($0.94)	MA	($0.85)	
MA	($1.09)	MD	($0.96)	DC	($0.89)	
DC	($1.19)	DC	($0.99)	MD	($0.89)	
DE	($1.25)	RI	($1.11)	NJ	($0.99)	
RI	($1.28)	CT	($1.16)	RI	($1.00)	
CT	($1.33)	NJ	($1.16)	CT	($1.05)	
NJ	($1.39)	DE	($1.17)	DE	($1.07)	

IX. Option 4B: Figure 19

Figure 19: Option 4B: Modified FCC Plan: 40% Interstate/60% State, Remaining State Responsibility per Access Line per Month, BCPM

State	BCPM State $30	State	BCPM State $40	State	BCPM State $50
WV	$12.74	WY	$10.37	WY	$9.72
MS	$12.57	MS	$9.90	MS	$8.13
WY	$11.72	WV	$9.84	WV	$7.92
MT	$8.82	ID	$7.72	MT	$7.00
ID	$8.02	MT	$7.58	SD	$6.65
SD	$8.00	SD	$7.14	NV	$6.07
NV	$7.62	NV	$6.52	ID	$5.89
NE	$7.15	NE	$6.24	NE	$5.76
VT	$6.96	VT	$5.14	ND	$4.80
AL	$6.92	ND	$5.10	MO	$4.18
KY	$6.42	MO	$4.92	OK	$4.04
OK	$6.25	AL	$4.91	KS	$3.97
MO	$6.16	OK	$4.78	VT	$3.93
AR	$5.99	KY	$4.78	IA	$3.85
NM	$5.78	KS	$4.45	NM	$3.84
ND	$5.63	NM	$4.44	AL	$3.78
ME	$5.58	AR	$4.44	KY	$3.73
LA	$5.54	IA	$4.41	MN	$3.70
IA	$5.50	MN	$4.25	AR	$3.61
KS	$5.28	ME	$4.08	LA	$3.27
MN	$5.23	LA	$3.53	ME	$3.14
NC	$4.43	TX	$3.36	TX	$2.87
TX	$4.38	IN	$3.00	IN	$2.26
IN	$4.37	OR	$2.69	OR	$2.24
TN	$3.93	NC	$2.67	WA	$2.12
VA	$3.87	WI	$2.52	WI	$2.04
NH	$3.84	NH	$2.52	VA	$2.04
SC	$3.76	WA	$2.51	CO	$1.90
OR	$3.63	TN	$2.50	NH	$1.86
WA	$3.44	CO	$2.23	TN	$1.77
WI	$3.36	Nationwide Avg.	$2.05	Nationwide Avg.	$1.76
GA	$3.11	GA	$2.02	NC	$1.75
OH	$3.11	OH	$2.00	SC	$1.60
Nationwide Avg.	$3.10	SC	$1.96	GA	$1.50
CO	$3.07	MI	$1.92	IL	$1.49
AZ	$2.98	AZ	$1.91	MI	$1.44
MI	$2.82	PA	$1.52	OH	$1.44
PA	$2.43	UT	$1.26	AZ	$1.31
IL	$2.43	DE	$1.07	PA	$1.06
DE	$1.90	HI	$0.96	UT	$1.05
UT	$1.90	NY	$0.89	HI	$0.71
PR	$1.78	CA	$0.83	CA	$0.68
HI	$1.58	FL	$0.69	NY	$0.65
CT	$1.45	MD	$0.64	DE	$0.61
FL	$1.37	CT	$0.49	FL	$0.49
NY	$1.35	RI	$0.39	MD	$0.39
MD	$1.27	PR	$0.38	CT	$0.21
RI	$1.21	MA	$0.34	MA	$0.20
CA	$1.18	VA	$0.15	RI	$0.15
MA	$0.83	AK	$0.12	PR	$0.14
NJ	$0.37	NJ	$0.11	AK	$0.09
AK	$0.31	IL	$0.05	NJ	$0.05
DC	$0.00	DC	$0.00	DC	$0.00

IX. Option 4B: Figure 20

Figure 20: Option 4B: Modified FCC Plan: 40% Interstate/60% State, Remaining State Responsibility per Access Line per Month, HAI

State	HAI Interstate	State	HAI Interstate	State	HAI Interstate
	$30		$40		$50
MS	$3.30	NE	$2.25	WY	$1.61
NE	$2.87	MS	$2.03	MS	$1.24
WV	$2.74	WY	$1.94	NV	$1.24
WY	$2.50	WV	$1.58	NE	$1.23
VT	$2.02	MT	$1.48	MT	$1.20
MT	$1.93	ID	$1.28	LA	$0.99
ID	$1.89	MO	$1.23	SD	$0.99
MO	$1.87	SD	$1.21	ID	$0.88
ME	$1.73	ND	$1.09	ND	$0.85
AL	$1.69	VT	$1.07	MO	$0.83
SD	$1.60	OK	$1.00	WV	$0.79
OK	$1.52	MN	$0.99	OK	$0.74
MN	$1.41	NV	$0.98	MN	$0.71
ND	$1.37	ME	$0.93	ME	$0.55
KY	$1.28	AL	$0.92	KS	$0.54
VA	$1.20	KS	$0.77	VT	$0.50
NC	$1.19	NM	$0.72	AL	$0.49
NM	$1.13	HI	$0.67	AR	$0.47
NV	$1.10	VT	$0.66	TX	$0.46
KS	$1.10	IA	$0.65	IA	$0.41
NH	$1.07	TX	$0.65	CO	$0.41
LA	$1.06	AR	$0.65	WA	$0.39
IA	$1.05	LA	$0.59	HI	$0.39
HI	$1.01	CO	$0.58	UT	$0.33
AR	$0.99	KY	$0.57	AZ	$0.32
TX	$0.96	NC	$0.56	VA	$0.31
CO	$0.90	NH	$0.53	Nationwide Avg.	$0.25
IN	$0.84	WA	$0.52	NC	$0.24
WA	$0.75	UT	$0.42	KY	$0.21
Nationwide Avg.	$0.68	IN	$0.42	OR	$0.21
TN	$0.68	AZ	$0.41	IL	$0.19
OR	$0.65	Nationwide Avg.	$0.40	IN	$0.19
PA	$0.61	OR	$0.36	NM	$0.17
UT	$0.58	IL	$0.32	AK	$0.17
OH	$0.57	TN	$0.29	GA	$0.15
AZ	$0.56	PA	$0.29	OH	$0.11
IL	$0.53	GA	$0.27	TN	$0.11
GA	$0.52	NY	$0.25	WI	$0.11
WI	$0.50	OH	$0.23	PA	$0.10
MI	$0.44	WI	$0.23	MI	$0.10
NY	$0.44	MI	$0.19	CA	$0.10
SC	$0.42	AK	$0.18	NY	$0.09
DE	$0.29	CA	$0.13	NJ	$0.08
MD	$0.28	SC	$0.13	FL	$0.07
FL	$0.23	FL	$0.12	MD	$0.04
AK	$0.20	MD	$0.11	SC	$0.04
CA	$0.18	DE	$0.04	MA	$0.02
CT	$0.16	MA	$0.04	DE	$0.01
MA	$0.10	CT	$0.03	CT	$0.01
RI	$0.08	PR	$0.01	NH	$0.01
PR	$0.06	RI	$0.01	RI	$0.00
NJ	$0.02	NJ	$0.01	PR	$0.00
DC	$0.00	DC	$0.00	DC	$0.00

X. Option 5: Telephone Numbers

Option 5: Telephone Numbers

This option is an overall approach to funding the high cost fund without regard to past interstate/state jurisdictional distinctions. The entire fund is recovered from one mechanism.

This option assumes the federal fund will recover 100% of the support calculated at the representative benchmarks. The high cost fund charge is assessed to customers based upon phone numbers in service.

Monthly Surcharges for Option 5: Telephone Numbers

	Option 5: Nationwide Surcharge* per Telephone Number per Month (in dollars)				**Total Fund (in millions)**		
Amount of Benchmark (in dollars)	$30	$40	$50		$30	$40	$50
BCPM	$4.20	$2.94	$2.59		$11,670 m	$8,173 m	$7,201 m
HAI	$1.31	$0.97	$0.79		$3,628 m	$2,692 m	$2,198 m

*This hypothetical surcharge is based on 1996 total (interstate and state) retail revenues. This surcharge would apply to each telephone number per month. To be competitively neutral, this surcharge should be applied entirely to the end user and must be applied by all companies to their customers.

The above chart contains nationwide surcharges that would apply to each telephone number per month under **Option 5**. The data is the sum of the 1998 calculated rural amounts **(Figure 2)** for the high cost fund and results from the proxy models (BCPM and HAI) for the three benchmark levels. This surcharge is calculated using the total fund (interstate and state) generated from each model for a given benchmark divided by the total number of telephone numbers divided by twelve months.

To be competitively neutral, this surcharge should be applied entirely to the end user and must be applied by all companies to their customers.

Figures 21 and 22 indicate the amount paid and received per month per number in each state. The monthly per line amount for each state is calculated by subtracting from the total subsidy for each state the product of the surcharge per telephone number per month times the number of telephone numbers in the state times twelve. The result is then divided by the number of access lines in the state and by twelve months to produce payers and receivers on a per line basis.

As with the earlier charts, a positive amount indicates a net receiver and a negative amount indicates a net payer. Since the results are on a per access line basis instead of on a per telephone number basis, in all cases the amount paid is overstated. In reality, no customer with a single phone number would pay more than the estimated surcharge listed above.

X. Option 5: Figure 21

Figure 21: Option 5: Telephone Numbers, Net Payers and Receivers per Access Line per Month, BCPM

State	BCPM	State	BCPM	State	BCPM	
	$30		$40		$50	
WY	$19.81	WY	$19.12	WY	$18.48	
WV	$17.81	MT	$16.89	MT	$16.27	
MT	$17.68	WV	$14.51	AK	$12.43	
MS	$16.40	MS	$13.67	SD	$12.38	
SD	$12.99	SD	$12.83	WV	$11.72	
AK	$11.81	AK	$12.27	MS	$11.20	
ND	$10.40	ID	$11.45	ND	$10.49	
ID	$10.37	ND	$10.67	ID	$8.84	
AR	$9.82	NE	$8.61	NE	$8.23	
NE	$8.61	AR	$8.51	AR	$7.48	
VT	$8.58	NV	$7.37	NV	$7.11	
OK	$7.53	VT	$7.12	KS	$6.55	
NV	$7.43	KS	$6.92	NM	$6.21	
NM	$7.42	NM	$6.76	OK	$5.94	
AL	$6.87	OK	$6.73	VT	$5.53	
KS	$6.75	IA	$5.76	IA	$5.22	
KY	$6.24	MO	$5.21	MO	$4.46	
IA	$6.22	AL	$5.20	LA	$4.16	
ME	$6.04	KY	$5.12	ME	$3.89	
LA	$5.76	ME	$5.04	MN	$3.87	
MO	$5.55	MN	$4.33	KY	$3.82	
MN	$4.33	LA	$4.13	AL	$3.78	
SC	$3.24	OR	$2.25	OR	$1.95	
OR	$2.19	TX	$2.15	TX	$1.82	
TX	$2.06	WI	$1.97	WI	$1.59	
NC	$2.02	SC	$1.60	SC	$1.39	
WI	$1.85	IN	$1.27	CO	$0.89	
TN	$1.83	TN	$1.09	IN	$0.52	
IN	$1.78	NH	$1.01	WA	$0.48	
NH	$1.47	CO	$0.96	NH	$0.40	
GA	$0.73	NC	$0.84	TN	$0.32	
VA	$0.65	WA	$0.65	GA	$0.17	**Receiver**
CO	$0.58	GA	$0.57	VA	($0.09)	**Payer**
WA	$0.46	AZ	($0.00)	NC	($0.21)	
AZ	$0.05	MI	($0.55)	AZ	($0.53)	
OH	($0.64)	OH	($0.69)	MI	($0.86)	
MI	($0.84)	UT	($1.33)	IL	($1.01)	
PA	($1.64)	PA	($1.40)	OH	($1.13)	
IL	($1.77)	NY	($2.48)	UT	($1.20)	
UT	($2.04)	DE	($2.58)	PA	($1.68)	
DE	($3.05)	HI	($2.73)	NY	($2.38)	
PR	($3.16)	CA	($2.77)	CA	($2.50)	
NY	($3.52)	FL	($2.96)	HI	($2.62)	
HI	($3.55)	MD	($3.28)	FL	($2.79)	
FL	($3.66)	CT	($3.43)	DE	($2.83)	
CT	($3.68)	PR	($3.65)	MD	($3.18)	
CA	($4.04)	RI	($3.72)	CT	($3.38)	
MD	($4.09)	VA	($3.73)	MA	($3.48)	
RI	($4.23)	MA	($3.78)	PR	($3.55)	
MA	($4.82)	IL	($3.92)	RI	($3.60)	
NJ	($5.58)	NJ	($4.15)	NJ	($3.74)	
DC	($6.50)	DC	($4.56)	DC	($4.02)	

X. Option 5: Figure 22

Figure 22: Option 5: Telephone Numbers, Net Payers and Receivers per Access Line per Month, HAI

State	HAI $30	State	HAI $40	State	HAI $50	
AK	$13.40	AK	$13.58	AK	$13.66	
MT	$9.13	MT	$8.72	MT	$8.44	
WY	$8.04	WY	$7.52	WY	$7.19	
ND	$5.95	ND	$5.79	ND	$5.56	
SD	$5.25	SD	$4.95	SD	$4.76	
NE	$4.96	NE	$4.35	AR	$4.09	
MS	$4.93	AR	$4.21	KS	$3.07	
WV	$4.67	MS	$3.27	NE	$2.85	
AR	$4.43	ID	$3.23	LA	$2.82	
VT	$3.95	KS	$3.23	ID	$2.79	
ID	$3.82	WV	$3.14	OK	$2.78	
OK	$3.41	NM	$3.05	NM	$2.35	
KS	$3.37	OK	$2.98	MS	$2.20	
NM	$3.30	VT	$2.79	VT	$2.07	
ME	$3.07	ME	$2.13	WV	$2.05	
MO	$2.39	LA	$1.92	ME	$1.71	
LA	$2.24	MO	$1.79	NV	$1.60	
AL	$2.03	IA	$1.65	IA	$1.44	
IA	$1.95	MN	$1.46	MO	$1.36	
MN	$1.73	AL	$1.19	MN	$1.24	
KY	$1.38	CO	$0.98	CO	$0.95	
CO	$1.04	OR	$0.92	OR	$0.89	
OR	$0.96	NV	$0.91	SC	$0.75	
NH	$0.86	SC	$0.71	AL	$0.73	
SC	$0.82	KY	$0.63	WI	$0.55	
NV	$0.64	WI	$0.53	TX	$0.35	
NC	$0.63	NH	$0.43	GA	$0.32	
WI	$0.58	TX	$0.42	AZ	$0.30	
TX	$0.46	GA	$0.28	KY	$0.26	
VA	$0.36	AZ	$0.20	UT	$0.13	
GA	$0.24	NC	$0.04	WA	$0.06	**Receiver**
TN	$0.17	WA	$0.04	TN	($0.12)	**Payer**
AZ	($0.01)	UT	$0.02	NH	($0.20)	
IN	($0.03)	TN	($0.04)	NC	($0.25)	
WA	($0.04)	VA	($0.06)	VA	($0.37)	
UT	($0.17)	IN	($0.26)	IN	($0.39)	
HI	($0.21)	HI	($0.29)	HI	($0.49)	
PA	($0.62)	IL	($0.62)	MI	($0.53)	
MI	($0.70)	MI	($0.64)	IL	($0.57)	
OH	($0.73)	PA	($0.69)	NY	($0.74)	
IL	($0.76)	NY	($0.72)	PA	($0.75)	
NY	($0.88)	OH	($0.81)	OH	($0.76)	
FL	($1.34)	CA	($1.03)	CA	($0.83)	
CA	($1.44)	FL	($1.03)	FL	($0.86)	
MD	($1.45)	MD	($1.24)	NJ	($1.02)	
DE	($1.46)	CT	($1.30)	MD	($1.08)	
CT	($1.59)	DE	($1.36)	CT	($1.09)	
MA	($1.75)	MA	($1.36)	MA	($1.13)	
PR	($1.80)	PR	($1.39)	PR	($1.15)	
RI	($1.81)	NJ	($1.41)	DE	($1.16)	
NJ	($1.88)	RI	($1.43)	RI	($1.17)	
DC	($2.02)	DC	($1.50)	DC	($1.23)	

XI. Option 6: Percentage of Retail Revenues

Option 6: Percentage of Retail Revenues

This option is an overall approach with the entire fund being recovered using one mechanism. The basis for assessment of the dollars is a uniform percent charge on total retail revenues.

Like the previous telephone numbers option, the revenues option assumes the federal fund recovers 100% of the support calculated at the three benchmark levels. The high cost fund charge is assessed as a percentage of retail revenues on the customer's bill.

The uniform percent surcharge is calculated by using the total fund (interstate and state) generated from each model for a given benchmark divided by total (interstate and state) 1995 retail revenues. The data is the sum of the 1998 calculated rural amounts **(Figure 2)** for the high cost fund and results from the proxy models (BCPM and HAI) for the three benchmark levels.

Monthly Surcharges for Option 6: Percentage of Retail Revenues

	Option 6: Nationwide Surcharge* on Percentage of Retail Revenues(%)			Total Fund (in millions)		
Amount of Benchmark (in dollars)	$30	$40	$50	$30	$40	$50
BCPM	6.2%	4.3%	3.8%	$11,670 m	$8,173 m	$7,201 m
HAI	1.9%	1.4%	1.2%	$3,628 m	$2,692 m	$2,198 m

*This hypothetical surcharge is based on 1996 total (interstate and state) retail revenues. To be competitively neutral, this surcharge should be applied entirely to the end user and must be applied by all companies to their customers.

Figures 23 and 24 compare the amount paid and received as a percentage of retail revenues in each state. The monthly per line amount for each state is calculated by subtracting from the total subsidy for each state the product of the surcharge on percentage of retail revenues and the total retail revenues (interstate and state) for this same state. The result is then divided by the number of access lines in the state and by twelve months to produce payers and receivers on a per line basis. As with the earlier charts, a positive amount indicates a net receiver and a negative amount indicates a net payer.

XI. Option 6: Figure 23

Figure 23: Option 6: Percentage of Retail Revenues, Net Payers and Receivers per Access Line per Month, BCPM

State	BCPM	State	BCPM	State	BCPM	
	$30		$40		$50	
WY	$18.42	WY	$18.15	WY	$17.62	
WV	$16.82	MT	$15.41	MT	$14.97	
MS	$15.77	WV	$13.82	WV	$11.12	
MT	$15.56	MS	$13.23	SD	$11.01	
SD	$10.77	SD	$11.28	MS	$10.81	
ID	$9.65	ID	$10.95	AK	$10.17	
AR	$8.21	AK	$9.70	ND	$8.72	
AK	$8.14	ND	$8.67	ID	$8.40	
NV	$7.81	NV	$7.63	NV	$7.35	
OK	$7.58	NE	$7.59	NE	$7.33	
ND	$7.54	AR	$7.38	AR	$6.49	
VT	$7.32	OK	$6.76	KS	$6.16	
NE	$7.16	KS	$6.48	OK	$5.97	
AL	$6.55	VT	$6.24	NM	$5.41	
KS	$6.12	NM	$5.86	VT	$4.76	
NM	$6.12	MO	$5.36	MO	$4.59	
MO	$5.75	AL	$4.98	IA	$4.52	
ME	$5.55	IA	$4.97	LA	$4.01	
LA	$5.51	ME	$4.70	MN	$3.77	
IA	$5.08	KY	$4.28	AL	$3.59	
KY	$5.05	MN	$4.21	ME	$3.59	
MN	$4.16	LA	$3.96	KY	$3.08	
TX	$2.42	TX	$2.40	TX	$2.04	
IN	$2.09	OR	$2.03	OR	$1.76	
OR	$1.87	WI	$1.80	WI	$1.44	
NC	$1.70	IN	$1.48	IN	$0.71	
WI	$1.61	TN	$0.86	CO	$0.53	
TN	$1.51	NC	$0.61	WA	$0.37	
SC	$1.40	CO	$0.54	SC	$0.25	
NH	$0.77	NH	$0.52	TN	$0.12	**Receiver**
VA	$0.58	WA	$0.52	NH	($0.03)	**Payer**
WA	$0.29	SC	$0.31	VA	($0.13)	
AZ	$0.04	AZ	($0.01)	NC	($0.41)	
CO	($0.01)	GA	($0.13)	GA	($0.45)	
GA	($0.28)	MI	($0.30)	AZ	($0.53)	
MI	($0.49)	OH	($0.91)	IL	($0.64)	
OH	($0.97)	PA	($1.03)	MI	($0.64)	
PA	($1.11)	UT	($1.16)	UT	($1.04)	
IL	($1.17)	DE	($1.87)	OH	($1.33)	
UT	($1.79)	HI	($2.30)	PA	($1.35)	
DE	($2.03)	CA	($2.34)	CA	($2.13)	
PR	($2.44)	NY	($2.51)	DE	($2.20)	
HI	($2.95)	FL	($2.82)	HI	($2.25)	
CA	($3.43)	MD	($3.08)	NY	($2.41)	
FL	($3.46)	PR	($3.15)	FL	($2.67)	
NY	($3.55)	RI	($3.28)	MD	($3.00)	
RI	($3.60)	DC	($3.43)	DC	($3.02)	
MD	($3.81)	IL	($3.49)	PR	($3.10)	
CT	($4.41)	MA	($3.57)	RI	($3.21)	
MA	($4.52)	VA	($3.78)	MA	($3.30)	
DC	($4.89)	CT	($3.94)	NJ	($3.69)	
NJ	($5.51)	NJ	($4.10)	CT	($3.83)	

XI. Option 6: Figure 24

Figure 24: Option 6: Percentage of Retail Revenues, Net Payers and Receivers per Access Line per Month, HAI

State	HAI	State	HAI	State	HAI	
	$30		$40		$50	
AK	$12.26	AK	$12.73	AK	$12.97	
MT	$8.47	MT	$8.23	MT	$8.04	
WY	$7.61	WY	$7.20	WY	$6.93	
ND	$5.06	ND	$5.13	ND	$5.02	
MS	$4.73	SD	$4.44	SD	$4.34	
SD	$4.57	NE	$4.01	AR	$3.79	
NE	$4.51	AR	$3.84	KS	$2.95	
WV	$4.37	MS	$3.13	OK	$2.79	
AR	$3.93	KS	$3.08	LA	$2.77	
ID	$3.60	ID	$3.07	ID	$2.65	
VT	$3.56	OK	$2.99	NE	$2.58	
OK	$3.43	WV	$2.92	NM	$2.11	
KS	$3.17	NM	$2.75	MS	$2.08	
ME	$2.92	VT	$2.50	WV	$1.86	
NM	$2.90	ME	$2.02	VT	$1.83	
MO	$2.45	LA	$1.86	NV	$1.68	
LA	$2.16	MO	$1.84	ME	$1.61	
AL	$1.93	MN	$1.42	MO	$1.40	
MN	$1.68	IA	$1.39	IA	$1.23	
IA	$1.60	AL	$1.12	MN	$1.21	
KY	$1.01	NV	$1.00	CO	$0.83	
CO	$0.86	OR	$0.85	OR	$0.83	
OR	$0.86	CO	$0.84	AL	$0.67	
NV	$0.76	TX	$0.50	WI	$0.50	
NH	$0.65	WI	$0.48	TX	$0.42	
TX	$0.57	KY	$0.36	SC	$0.41	
NC	$0.53	SC	$0.28	AZ	$0.30	
WI	$0.51	NH	$0.27	UT	$0.18	
VA	$0.34	AZ	$0.20	GA	$0.13	
SC	$0.25	UT	$0.08	KY	$0.04	
TN	$0.07	GA	$0.05	WA	$0.03	**Receiver**
IN	$0.06	WA	$0.00	TN	($0.18)	**Payer**
AZ	($0.01)	NC	($0.04)	NC	($0.31)	
HI	($0.02)	VA	($0.07)	IN	($0.33)	
GA	($0.07)	TN	($0.11)	NH	($0.34)	
UT	($0.09)	HI	($0.15)	HI	($0.38)	
WA	($0.09)	IN	($0.18)	VA	($0.39)	
PA	($0.46)	IL	($0.48)	IL	($0.46)	
IL	($0.57)	MI	($0.56)	MI	($0.47)	
MI	($0.59)	PA	($0.57)	PA	($0.64)	
OH	($0.83)	NY	($0.73)	CA	($0.71)	
NY	($0.89)	OH	($0.88)	NY	($0.74)	
DE	($1.14)	CA	($0.89)	FL	($0.82)	
CA	($1.25)	FL	($0.98)	OH	($0.82)	
FL	($1.27)	DC	($1.13)	DC	($0.92)	
MD	($1.36)	DE	($1.13)	DE	($0.97)	
DC	($1.52)	MD	($1.18)	NJ	($1.01)	
PR	($1.58)	PR	($1.22)	PR	($1.02)	
RI	($1.61)	MA	($1.29)	MD	($1.03)	
MA	($1.65)	RI	($1.29)	RI	($1.05)	
CT	($1.82)	NJ	($1.40)	MA	($1.07)	
NJ	($1.86)	CT	($1.47)	CT	($1.23)	

XII. Appendix A: What is the History of these Issues?

History and Current Subsidies

The telephone industry and regulatory agencies have historically maintained affordable residential rates through programs that provide subsidies and through pricing policies. The goal of universal service has been accomplished without the customer being aware that the programs exist. Historically, the support mechanisms that have kept many residential rates below their cost have been like the shell game. You know they are in there somewhere; identifying exactly where can be a guessing game.[29]

Currently, some of the subsidies are explicit in terms of intercompany payments (while not necessarily explicit to the customer). The 1998 calculations for the cost of these programs, approximately $2.3 billion, are included in the toll rates of interexchange customers.[30] The programs provide assistance to companies serving high-cost areas and to low-income customers. See **Section XIII, Figure 25**, for a cash flow diagram of the FCC's current plan for universal service.

The subsidies provided through pricing policies are not as easily identified or quantified. However, we do know that average pricing by large local exchange companies has masked the real cost to the customer of providing telephone service in rural areas. In the 1993 TIAP paper *What is the Price of Universal Service? Impact of Deaveraging Nationwide Urban/Rural Rates*, it was shown that the estimated nationwide cost of providing rural service exceeded the revenue paid by rural customers by $8.7 billion dollars.[31]

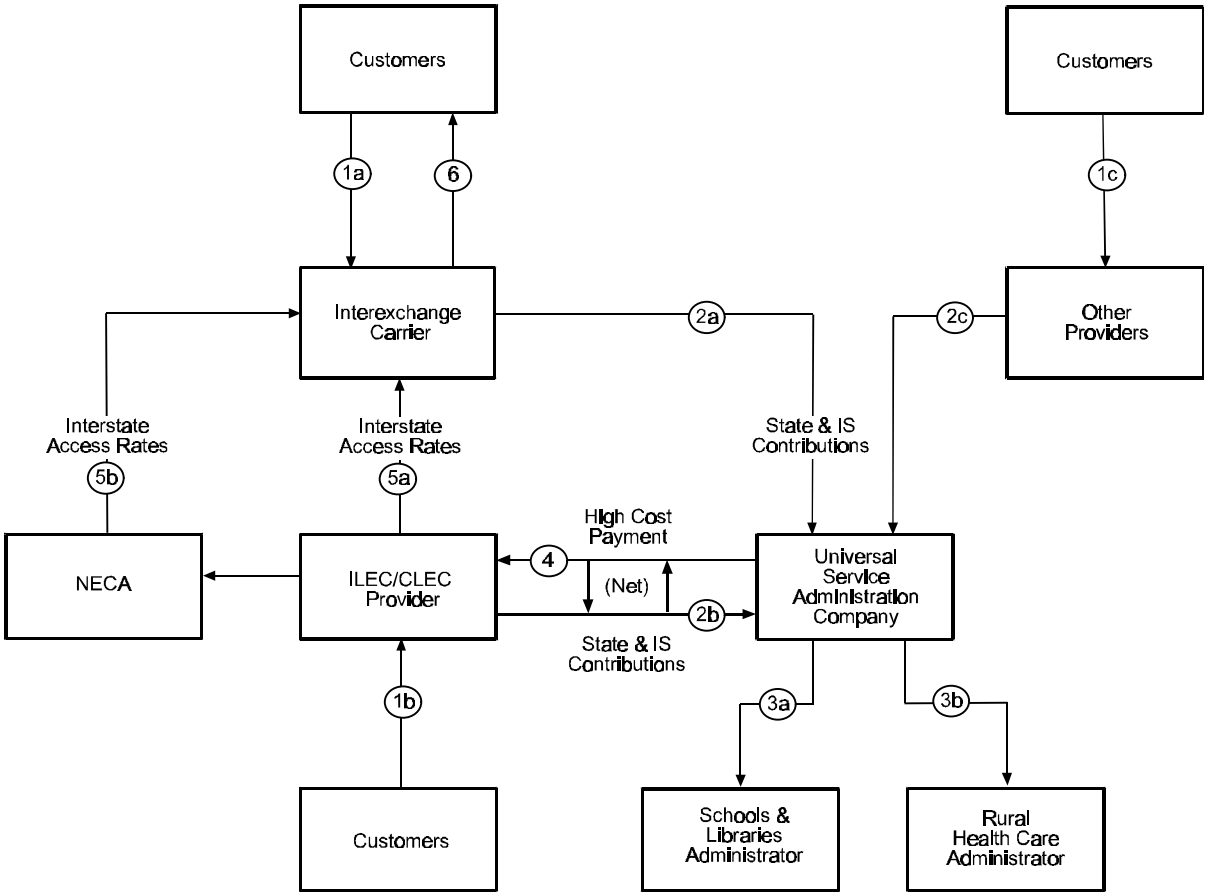
Subsidies have also been provided through pricing some services above cost. For example, on average, the single line business rate is 2.3 times the average residential rate.[32] Rate averaging and above cost pricing are policies that cannot be sustained in a competitive industry. The *Act of 1996* recognized the need to establish a new method of maintaining universal service.

XIII. Appendix B: Cash Flow Diagram, Figure 25

Cash Flow Diagram

Figure 25 illustrates the FCC's current plan for universal service and other support mechanisms.[33]

Figure 25: Cash Flow for the FCC's Plan for the New Universal Service Fund



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XIII. Appendix B: Cash Flow Diagram, Figure 25, cont.

Figure 25: Cash Flow for the FCC's Current Plan to Fund Universal Service, cont.

1a. Total state and interstate (IS) revenues from interexchange carrier (IXC) customers.
1b. Total state and interstate revenues from incumbent local exchange carrier (ILEC) customers and from competitive local exchange carrier (CLEC) customers.
1c. Total state and interstate revenues from other service providers.
2a. State and interstate contributions to schools, libraries and health care providers fund plus interstate contributions to high-cost/low-income fund (the contributions are netted with the schools/libraries/health care high-cost fund receipts).
2b. Same as above.
2c. Same as above.
3a. Universal Service Administrative Company (USAC) passes the schools and libraries contributions to the Schools and Libraries Corporation.
3b. USAC passes the health care provider contributions to the Rural Health Care Corporation (RHC).
4. USAC calculates the high-cost, schools, libraries, and health care settlements and passes them to the ILEC or CLEC.
5a. The non-NECA (National Exchange Carrier Association) pool ILECs/CLECs pass on the net of (all) universal service contributions less Schools and Libraries Corporation/RHC high-cost fund receipts to the IXCs in the form of increases/decreases in access rates.
5b. The NECA pool ILECs/CLECs pass on the net of (all) universal service contributions less Schools and Libraries Corporation/RHC high-cost fund receipts to the IXCs in the form of increases/decreases in access rates.
6. The IXC passes on the increased access charges to its customers in the form of increased rates.

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XIV. Appendix C: Sources, Calculations, and Assumptions

General Caveats

1. This paper models the current FCC proposal and various options for funding the high cost fund. It should be noted that many other options are also possible.

2. This paper does not model high cost funding mechanisms within a state.

3. This paper focuses only on subsidies for high-cost areas for the high cost fund. It omits subsidies for low-income households, schools, libraries, and rural health care providers.

Proxy Model Data (BCPM and HAI)

4. The cost data for the various options is generated by either the BCPM or the HAI proxy models. The data is from BCPM, Version 3.0, January 14, 1998; and from HAI, Version 5.0A, February 16, 1998.

   With the exception of Option 3 (Density Zones) the BCPM model results are based on density zone levels and the HAI model results are based on wire centers.

   The proxy models generated high cost funds for primary residential lines and for single-line businesses. The proxy models were run with $30, $40, and $50 benchmarks to generate the state-by-state amounts and total fund sizes. The density zones are those generated by the proxy models.

Modeling Assumptions

5. Revenue benchmarks:
   The options use $30, $40, and $50 revenue benchmarks to create three sizes of high cost funds for each cost model. The result is six differently sized funds.

6. Non-Rural/Rural Companies:
   This paper divides the companies between non-rural and rural. The non-rural are companies with over 100,000 access lines. The rural are companies with access lines 100,000 and under. This is essentially a large/small distinction rather than an urban/rural one because some of the large companies also have a large portion of rural access lines. There are approximately 1,400 study areas (companies).

7. The high cost fund for the rural companies is the 1998 amount. This is also a minimum amount for the year 2001 when forward-looking cost models for rural companies are slated for implementation.

8. The calculations for the 1999 rural company amount use 1998 National Exchange Carrier Association (NECA) expense adjustment calculations for the high cost fund.

9. Current projections for rural and non-rural long term support (LTS) are calculated on a new basis as of January 1, 1998. For purposes of modeling, the current projections for LTS are used.[34]

10. The input numbers exclude data for the Virgin Islands, Guam, and Micronesia. The input numbers for Options 1A through 1C also exclude data for Alaska and Puerto Rico since the Ad Hoc Proposal excludes them.

11. Number of access lines is the 1997 NECA submission to the FCC which uses 1996 access lines.

Loop (or Access Line) Data

12. The loop data is from the Alexander Belinfante and James Eisner, *Universal Service Support and Telephone Revenue by State* (hereinafter referred to as *FCC Universal Service Support*), FCC, Common Carrier Bureau, Industry Analysis Division, January 1998, Table 1, page 12. These are

1996 message loops. The loops are total for multi-line business, single-line business, and residential customers.

13. The proxy models calculate network investment for all lines (residential and business). Then the models calculate the support for residential and single-line businesses only. These results are the outputs used by this paper.

Minutes of Use Data

14. The common line (CL) minutes of use (MOU) data are from *FCC Universal Service Support*. These are 1995 interstate access minutes. This is public data for all study areas. The minutes of use were used to distribute the state revenue totals into study area detail to determine rural and non-rural company amounts for each state.

Retail Revenue Data

15. Retail revenue data are from the *FCC Universal Service Support.* This report distributes 1996 revenues among individual states. The data in this FCC report are primarily from the FCC's Common Carrier Bureau, Industry Analysis Division reports: *Telecommunications Industry Revenue: TRS Fund Worksheet Data (Telecommunications Industry Revenue)* and from *1996/1997 Statistics of Communications Common Carriers*. The *1997 TRS* contains revenues for LECs, IXCs, wireless, and other companies providing telecommunications services. The data exclude the Virgin Islands, Guam, and Micronesia.

    The definition of retail revenue is "Total billed revenue less access revenue derived from charges to other carriers and less revenue to carriers for payment of communication services taken for resale."[35] The FCC includes "revenues from local exchange and wireless services, toll revenue and end user access charges. An adjustment must be made for toll services that are resold to avoid double counting."[36] The FCC estimates "that 6% of interstate toll revenue and intrastate-interLATA toll revenue are payments to carriers for telecommunication services for resale."[37]

Current High Cost Fund Support Data

16. The current high cost fund support is the sum of the old universal service fund, weighted dial equipment minutes (DEM), and long term support (LTS). See **Section II, Figure 1**, for the amounts. The old USF non-rural and rural amounts are based on the *1997 USF Submission* by NECA. The calculations for 1998 weighted DEM and LTS are from a letter from USAC to the FCC, October 31, 1997.

Calculation of the Nationwide Surcharges and Net Payers/Net Receivers

17. Two surcharges are calculated for the non-rurals using proxy model results — one based on BCPM and one based on HAI. A third surcharge is calculated using the 1998 data. The rural surcharge is added to each non-rural proxy model surcharge to produce two nationwide surcharges. For Options 1 through 4, the surcharge is the support divided by interstate revenues (or by the appropriate percentage of interstate revenues). For Option 5, the surcharge is based on telephone numbers. For Option 6, the surcharge is based on total revenues.

18. For Options 1 through 4, contributions for each state are calculated by multiplying the surcharge times interstate revenues. For Option 5, the contributions for each state are calculated by multiplying the surcharge times the number of telephone numbers times 12 months. For Option 6, the contributions are the surcharge times total revenues for each state.

19. The net payers and net receivers on a monthly per line basis for each state is the high cost support minus the contribution. The result is divided by the number of loops and by 12 to make it monthly. For Option 5, the result is divided by telephone numbers instead of loops.

XIV. Appendix C: Sources, Calculations, and Assumptions, cont.

Sources and Assumptions for Option 5: Telephone Numbers

Figure 26 shows the sources and assumptions for developing the number of telephone numbers. The following points provide further details on the calculations for the total number of telephone numbers and their distribution among the states:

20. Assignment of numbers to individual states is different for each category of telephone numbers. Depending on the source, the data is for 1995 or 1996. The USF loop data are state specific and therefore directly assigned to the states. Data for other service customers, such as wireless or 800 numbers, use other methods to distribute the total amount among the states. For example, for the wireless customers (broadband and narrowband CMRS), the state distribution is assumed to be the same as the USF loops. For the 800 and 888 numbers, the state distribution is based on each state's percentage of total business lines.

21. *Traditional Wireline Numbers:*
For traditional wireline telephone company customers, USF loops (switched loops) were used as a surrogate for telephone numbers. Total loops include both switched and special access. To use total loops would require making the funding mechanism more of a "per connection" rather than a "per number" charge. Individual state amounts are based on state-specific USF loop data.

22. *Wireless Numbers:*
The wireless numbers are for 1996. They include cellular, personal communications services (PCS), and paging numbers based on number of subscribers.

23. Special access and private line are excluded from this approach because their customers do not have telephone numbers.

24. Resale of unbundled loops shouldn't lead to an increase of the number of numbers.

25. Centrex and PBX are excluded because these services do not directly translate into telephone numbers.

Sources and Assumptions for Option 6: Percentage of Retail Revenues

26. Retail revenues are based on the FCC's *Distribution of Revenues by States*. See the above discussion on retail revenues in this section.

XIV. Appendix C: Figure 26

Figure 26: Sources and Assumptions for the Number of Telephone Numbers

Item:	Source:	Method of Distributing Totals Among the States:
USF Loops	*1997 USF Submission* by NECA.	Allocation based directly on number of USF loops for each state. Data are aggregated from the study area to the state level.
Broadband CMRS (Cellular & Broadband PCS)	CTIA, website at http://www.wow-com.com/professional/index.cfm on September 1997, "CTIA's Semi-Annual Data Survey Results."	Percentage of Total USF Loops.
Narrowband CMRS (Paging & Narrowband PCS)	PCIA, *Wireless Market Portfolio: A Collection of Forecasts on the Wireless Industry*.	Percentage of Total USF Loops.
800/888 Numbers	FCC, *1995/1996 Statistics of Communications Common Carriers*, Table 8.14.	Percentage of Total Number of Business Lines.
Business Lines	FCC, *1995 ARMIS 43-08 Reports* for Tier 1 companies supplemented with REA data for small companies.	Not applicable.

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XV. Appendix D: Input Data

Sources and Assumptions for Input Data

Figure 27 is a list of the names of the states and their acronyms.

Figure 28 provides the input data for the 1996 number of access lines, 1995 telephone numbers, and 1996 retail revenues (state and interstate). The number of access lines is based on 1995 USF loops. For a description of retail revenues and for the development of 1995 telephone numbers, see **Section XIV, Appendix C**.

Figure 29 is the data from the BCPM and HAI cost proxy models which provide the amounts for the non-rural high cost fund by state for three benchmarks ($30, $40, and $50). **Figure 30** is the input data for the rural high cost fund. **Figure 31** is the state total of rural and non-rural. **Figures 32 and 33** calculate the amounts for each model for the FCC Plan for a 25% interstate/75% state fund.

Figures 34 and 35 provide proxy model input data for Option 3. The density zone data is for Zone1, for Zone 2, for the sum of Zones 1 and 2, and for the sum of Zones 1 through 9).

XV. Appendix D: Figure 27

Figure 27: State Names and Acronyms

State Name	Acronym for State Name
Alabama	AL
Alaska	AK
Arizona	AZ
Arkansas	AR
California	CA
Colorado	CO
Connecticut	CT
Delaware	DE
D. C.	DC
Florida	FL
Georgia	GA
Hawaii	HI
Idaho	ID
Illinois	IL
Indiana	IN
Iowa	IA
Kansas	KS
Kentucky	KY
Louisiana	LA
Maine	ME
Maryland	MD
Mass.	MA
Michigan	MI
Minnesota	MN
Mississippi	MS
Missouri	MO
Montana	MT

State Name	Acronym for State Name
Nebraska	NE
Nevada	NV
New Hampshire	NH
New Jersey	NJ
New Mexico	NM
New York	NY
North Car.	NC
North Dakota	ND
Ohio	OH
Oklahoma	OK
Oregon	OR
Pennsylvania	PA
Puerto Rico	PR
Rhode Island	RI
South Car.	SC
South Dakota	SD
Tennessee	TN
Texas	TX
Utah	UT
Vermont	VT
Virginia	VA
Washington	WA
West Virginia	WV
Wisconsin	WI
Wyoming	WY

XV. Appendix D: Figure 28

Figure 28: Total Access Lines, Telephone Numbers, and Retail Revenue Input Data

State	1996 Access Lines (in millions)	1995/1996 Number of Telephone Numbers (in millions)	1996 Interstate Retail Revenues (dollars in millions)	1996 State Retail Revenues (dollars in millions)
AK	0.4	0.2	192.4	265.0
AL	2.3	3.1	978.1	1,694.0
AR	1.3	1.3	589.1	921.0
AZ	2.5	3.5	1,403.0	1,454.0
CA	20.8	30.6	6,945.8	15,562.0
CO	2.5	3.5	1,385.7	1,716.0
CT	2.0	2.9	1,145.4	1,542.0
DC	0.9	1.4	410.2	447.0
DE	0.5	0.8	279.8	234.0
FL	9.9	14.4	4,657.2	6,727.0
GA	4.5	6.0	2,361.3	3,417.0
HI	0.7	1.0	297.1	459.0
IA	1.5	1.7	699.4	1,009.0
ID	0.6	0.8	365.1	390.0
IL	7.7	11.1	3,029.3	5,158.0
IN	3.3	4.7	1,310.2	2,335.0
KS	1.5	1.9	696.5	1,027.0
KY	2.0	2.5	989.3	1,547.0
LA	2.3	3.2	970.7	1,745.0
MA	4.3	6.3	1,898.2	3,003.0
MD	3.3	5.0	1,603.1	2,253.0
ME	0.8	0.9	349.1	481.0
MI	6.0	8.6	1,971.8	4,588.0
MN	2.8	3.6	1,197.8	1,839.0
MO	3.2	4.4	1,342.3	2,126.0
MS	1.3	1.7	591.7	989.0
MT	0.5	0.5	265.4	340.0
NC	4.5	6.2	1,997.1	3,304.0
ND	0.4	0.4	223.9	290.0
NE	1.0	1.2	450.1	766.0
NH	0.8	1.1	483.3	491.0
NJ	5.9	8.7	3,184.0	3,854.0
NM	0.9	1.1	504.6	597.0
NV	1.1	1.6	679.2	531.0
NY	12.3	17.6	5,446.3	9,022.0
OH	6.5	9.3	2,668.2	5,327.0
OK	1.9	2.4	791.5	1,176.0
OR	1.9	2.5	920.7	1,212.0
PA	7.7	10.8	3,183.2	4,796.0
PR	1.2	1.7	307.8	940.0
RI	0.6	0.9	319.5	363.0
SC	2.0	2.2	996.5	1,553.0
SD	0.4	0.4	224.6	272.0
TN	3.2	4.1	1,420.0	2,120.0
TX	11.3	16.0	4,253.4	7,986.0
UT	1.0	1.4	527.4	591.0
VA	4.2	6.0	2,095.2	2,850.0
VT	0.4	0.5	226.9	253.0
WA	3.3	4.6	1,579.3	2,267.0
WI	3.2	3.8	1,153.7	2,132.0
WV	0.9	1.1	430.9	674.0
WY	0.3	0.3	173.9	176.0
Total	**166.2**	**231.6**	**72,166.5**	**116,811.0**

XV. Appendix D: Figure 29

Figure 29: Input Data from the Two Proxy Models, Non-Rural Amounts for the HCF by State

State	BCPM Non-Rural HCF (dollars in millions)			HAI Non-Rural HCF (dollars in millions)		
	$30	**$40**	**$50**	**$30**	**$40**	**$50**
AK	2	1	1	1	1	1
AL	320	227	175	78	42	23
AR	158	117	95	26	17	12
AZ	152	97	67	28	21	16
CA	490	345	283	77	54	41
CO	150	109	93	44	28	20
CT	58	20	9	6	1	0
DC	0	0	0	0	0	0
DE	19	11	6	3	0	0
FL	271	136	96	46	25	14
GA	281	182	135	46	24	14
HI	22	13	10	14	9	5
IA	170	136	119	32	20	13
ID	103	99	76	24	16	11
IL	375	8	230	81	50	30
IN	292	201	151	56	28	13
KS	161	135	121	34	23	16
KY	255	190	148	51	23	8
LA	259	165	153	50	28	46
MA	71	29	17	9	3	2
MD	85	43	26	19	7	3
ME	87	64	49	27	14	9
MI	340	232	174	53	23	12
MN	290	236	205	78	55	40
MO	394	314	267	120	79	53
MS	320	252	207	84	52	32
MT	86	74	68	19	14	12
NC	394	238	156	106	50	21
ND	44	40	38	11	9	7
NE	137	120	110	55	43	23
NH	59	39	29	17	8	0
NJ	44	13	6	3	1	10
NM	100	77	66	19	12	3
NV	171	146	136	25	22	28
NY	331	218	159	109	61	22
OH	404	260	187	74	30	14
OK	234	179	151	57	37	28
OR	139	103	86	25	14	8
PA	373	233	162	93	44	16
PR	42	9	3	1	0	0
RI	15	5	2	1	0	0
SC	154	80	65	17	5	2
SD	63	56	53	13	10	8
TN	248	158	112	43	19	7
TX	989	759	648	217	147	104
UT	39	26	21	12	9	7
VA	322	13	170	100	55	26
VT	53	39	30	15	8	4
WA	229	167	142	50	35	26
WI	213	160	129	32	14	7
WV	237	183	147	51	29	15
WY	64	57	53	14	11	9
Total	**10,309**	**6,812**	**5,841**	**2,268**	**1,332**	**838**

XV. Appendix D: Figure 30

Figure 30: Input Data, Rural Amounts for the HCF by State

State	Rural HCF (dollars in millions)
	Total
AK	63
AL	27
AR	65
AZ	26
CA	43
CO	41
CT	1
DC	0
DE	0
FL	21
GA	61
HI	0
IA	30
ID	18
IL	23
IN	17
KS	57
KY	22
LA	63
MA	0
MD	1
ME	16
MI	30
MN	36
MO	41
MS	19
MT	42
NC	24
ND	23
NE	20
NH	8
NJ	1
NM	32
NV	9
NY	37
OH	15
OK	58
OR	36
PA	18
PR	0
RI	0
SC	38
SD	19
TN	28
TX	95
UT	8
VA	12
VT	10
WA	20
WI	51
WV	19
WY	18
Total	**1,360**

XV. Appendix D: Figure 31

Figure 31: Input Data from the Two Proxy Models, Totals (Rural and Non-Rural) for Options 1A, 1B, and 1C

State	BCPM Total Access Lines (in millions)	BCPM Total Monthly Cost per Line (in millions)	HAI Total Access Lines (in millions)	HAI Total Monthly Cost per Line (in millions)
	Average Cost	Average Cost	Average Cost	Average Cost
AK	NA	NA	NA	NA
AL	2	45.17	2	29.89
AR	1	54.69	1	33.81
AZ	2	36.94	2	20.62
CA	21	26.70	12	14.04
CO	2	35.16	2	23.78
CT	2	29.88	1	18.91
DC	1	30.47	0	17.77
DE	1	21.03	0	11.75
FL	10	30.41	7	16.79
GA	4	37.57	3	23.59
HI	1	28.08	0	18.09
IA	2	52.45	1	31.37
ID	1	45.84	0	32.29
IL	8	31.30	5	18.31
IN	3	38.29	2	22.35
KS	2	44.33	1	32.53
KY	2	45.33	1	27.19
LA	2	39.05	2	23.59
MA	4	26.39	3	15.73
MD	3	28.43	2	17.24
ME	1	44.60	1	31.39
MI	6	34.61	4	19.69
MN	3	41.60	2	27.79
MO	3	43.36	2	27.49
MS	1	53.84	1	35.77
MT	0	56.28	0	59.22
NC	4	38.94	3	26.39
ND	0	56.55	0	60.09
NE	1	46.71	1	40.89
NH	1	36.16	1	23.38
NJ	6	23.90	3	14.16
NM	1	43.77	1	34.19
NV	1	46.87	1	20.60
NY	12	26.98	8	16.79
OH	6	33.94	4	19.81
OK	2	46.79	1	31.35
OR	2	38.12	1	24.45
PA	8	32.00	5	19.60
PR	NA	NA	NA	NA
RI	1	29.17	0	15.63
SC	2	42.07	1	25.19
SD	0	61.22	0	60.38
TN	3	39.98	2	25.08
TX	11	36.03	7	21.91
UT	1	33.04	1	22.65
VA	0	47.95	0	31.02
VT	4	35.55	3	22.43
WA	3	34.23	2	20.01
WI	3	40.01	2	23.80
WV	1	52.54	1	36.45
WY	0	50.12	0	44.93
Total	**0**	**34.20**	**0**	**21.38**

XV. Appendix D: Figure 32

Figure 32: Calculated 25% Interstate and 75% State Amounts, BCPM Model

State	BCPM 25% Interstate (dollars in millions)			BCPM 75% State (dollars in millions)		
	$30	$40	$50	$30	$40	$50
AK	0.6	0.2	0.2	1.7	0.7	0.5
AL	80.0	56.8	43.6	240.1	170.3	130.9
AR	39.5	29.2	23.8	118.5	87.7	71.3
AZ	37.9	24.3	16.6	113.7	72.9	49.9
CA	122.6	86.2	70.7	367.8	258.6	212.2
CO	37.6	27.3	23.2	112.8	82.0	69.7
CT	14.6	5.0	2.1	43.7	14.9	6.4
DC	0.0	0.0	0.0	0.1	0.0	0.0
DE	4.8	2.7	1.5	14.5	8.1	4.6
FL	67.8	34.0	24.1	203.3	102.1	72.2
GA	70.2	45.5	33.8	210.7	136.6	101.5
HI	5.5	3.3	2.5	16.4	10.0	7.4
IA	42.4	34.0	29.7	127.2	101.9	89.1
ID	25.8	24.8	18.9	77.3	74.3	56.7
IL	93.7	2.0	57.6	281.1	6.0	172.8
IN	73.1	50.1	37.7	219.2	150.4	113.1
KS	40.2	33.9	30.2	120.6	101.6	90.6
KY	63.7	47.4	37.0	191.2	142.3	111.0
LA	64.8	41.3	38.2	194.5	124.0	114.7
MA	17.6	7.2	4.3	52.9	21.5	12.9
MD	21.2	10.6	6.5	63.6	31.9	19.4
ME	21.7	15.9	12.3	65.2	47.7	36.8
MI	84.9	58.0	43.5	254.8	174.0	130.4
MN	72.5	58.9	51.3	217.6	176.8	154.0
MO	98.4	78.6	66.7	295.2	235.8	200.2
MS	79.9	62.9	51.6	239.7	188.7	154.9
MT	21.5	18.5	17.1	64.6	55.5	51.2
NC	98.5	59.5	39.1	295.6	178.5	117.2
ND	11.1	10.0	9.4	33.3	30.1	28.3
NE	34.3	29.9	27.6	102.9	89.7	82.8
NH	14.8	9.7	7.2	44.4	29.1	21.5
NJ	11.0	3.4	1.6	33.0	10.1	4.8
NM	24.9	19.1	16.6	74.8	57.4	49.7
NV	42.8	36.6	34.1	128.3	109.8	102.2
NY	82.9	54.5	39.7	248.6	163.6	119.2
OH	100.9	65.0	46.6	302.7	195.0	139.9
OK	58.4	44.7	37.7	175.2	134.1	113.2
OR	34.7	25.7	21.4	104.0	77.2	64.2
PA	93.3	58.2	40.5	279.9	174.5	121.5
PR	10.6	2.3	0.8	31.7	6.8	2.5
RI	3.8	1.2	0.5	11.4	3.7	1.4
SC	38.4	20.0	16.3	115.3	60.0	49.0
SD	15.8	14.1	13.1	47.4	42.3	39.4
TN	62.1	39.6	28.0	186.2	118.7	83.9
TX	247.2	189.7	161.9	741.5	569.2	485.8
UT	9.7	6.5	5.4	29.1	19.4	16.1
VA	80.5	3.2	42.5	241.6	9.5	127.4
VT	13.2	9.8	7.5	39.7	29.3	22.4
WA	57.3	41.8	35.4	171.8	125.5	106.2
WI	53.3	40.0	32.3	160.0	120.0	97.0
WV	59.3	45.8	36.8	177.8	137.4	110.5
WY	16.0	14.1	13.3	47.9	42.4	39.8
Total	**2577.4**	**1703.1**	**1460.1**	**7732.1**	**5109.4**	**4380.4**

XV. Appendix D: Figure 34

Figure 33: Calculated 25% Interstate and 75% State Amounts, HAI Model

State	HAI 25% Interstate (dollars in millions)			HAI 75% State (dollars in millions)		
	$30	$40	$50	$30	$40	$50
AK	0.4	0.3	0.3	1.1	1.0	1.0
AL	19.5	10.6	5.7	58.6	31.8	17.1
AR	6.5	4.3	3.1	19.6	12.8	9.3
AZ	7.1	5.2	4.1	21.3	15.5	12.2
CA	19.1	13.5	10.2	57.4	40.6	30.5
CO	11.0	7.1	5.0	33.1	21.2	14.9
CT	1.6	0.3	0.1	4.8	1.0	0.2
DC	0.0	0.0	0.0	0.0	0.0	0.0
DE	0.7	0.1	0.0	2.2	0.3	0.1
FL	11.6	6.2	3.5	34.9	18.5	10.5
GA	11.6	6.1	3.4	34.9	18.2	10.3
HI	3.5	2.3	1.3	10.6	6.9	4.0
IA	8.1	5.0	3.2	24.4	15.1	9.5
ID	6.1	4.1	2.8	18.2	12.4	8.5
IL	20.4	12.5	7.5	61.1	37.4	22.4
IN	14.0	7.0	3.2	42.0	21.0	9.5
KS	8.4	5.8	4.1	25.1	17.5	12.3
KY	12.7	5.7	2.1	38.1	17.0	6.3
LA	12.4	6.9	11.6	37.3	20.8	34.7
MA	2.2	0.8	0.4	6.7	2.5	1.1
MD	4.7	1.8	0.7	14.2	5.3	2.2
ME	6.7	3.6	2.1	20.2	10.9	6.4
MI	13.4	5.8	3.1	40.1	17.3	9.3
MN	19.6	13.7	9.9	58.7	41.1	29.7
MO	29.9	19.7	13.2	89.7	59.2	39.6
MS	21.0	12.9	7.9	63.0	38.8	23.7
MT	4.7	3.6	2.9	14.1	10.8	8.8
NC	26.6	12.4	5.3	79.7	37.3	16.0
ND	2.7	2.1	1.7	8.1	6.4	5.0
NE	13.7	10.8	5.9	41.2	32.4	17.6
NH	4.1	2.1	0.0	12.4	6.2	0.1
NJ	0.6	0.2	2.4	1.9	0.5	7.2
NM	4.9	3.1	0.7	14.6	9.3	2.2
NV	6.2	5.5	7.0	18.6	16.4	20.9
NY	27.2	15.2	5.4	81.7	45.5	16.2
OH	18.5	7.6	3.5	55.5	22.8	10.5
OK	14.2	9.3	6.9	42.6	27.9	20.7
OR	6.2	3.5	2.0	18.6	10.4	5.9
PA	23.4	11.0	4.0	70.1	32.9	12.0
PR	0.4	0.1	0.0	1.1	0.3	0.0
RI	0.3	0.0	0.0	0.8	0.1	0.0
SC	4.3	1.3	0.4	12.9	3.9	1.3
SD	3.2	2.4	1.9	9.5	7.2	5.8
TN	10.8	4.7	1.7	32.3	14.0	5.1
TX	54.3	36.7	26.0	162.8	110.1	78.1
UT	3.0	2.1	1.7	9.0	6.4	5.1
VA	24.9	13.7	6.5	74.8	41.0	19.6
VT	3.8	2.0	1.0	11.5	6.1	2.9
WA	12.6	8.7	6.5	37.7	26.1	19.5
WI	7.9	3.6	1.7	23.8	10.7	5.0
WV	12.8	7.3	3.7	38.3	22.0	11.0
WY	3.4	2.6	2.2	10.2	7.9	6.6
Total	**566.9**	**332.9**	**209.6**	**1700.7**	**998.8**	**628.7**

XV. Appendix D: Figure 34

Figure 34: Proxy Model Input Data for Option 3, Density Zone 1, Zone 2, and Total Zones (1 to 9), BCPM

State	BCPM Interstate Zone 1, $30	BCPM Interstate Zone 2, $30	BCPM Interstate Zones 1 + 2, $30	BCPM Interstate Total Zones (1 to 9), $30
AK	0.2	0.8	0.9	2.3
AL	64.8	209.1	274.0	320.1
AR	51.1	80.7	131.8	158.0
AZ	40.0	34.0	74.0	151.6
CA	149.3	210.1	359.4	490.3
CO	63.1	54.8	117.9	150.4
CT	0.5	23.1	23.6	58.2
DC	0.0	0.0	0.0	0.1
DE	0.2	12.6	12.8	19.3
FL	43.7	111.2	154.8	271.1
GA	54.8	166.4	221.2	281.0
HI	4.5	10.3	14.8	21.9
IA	90.8	58.5	149.3	169.6
ID	52.5	42.2	94.6	103.1
IL	132.3	183.5	315.8	374.9
IN	25.3	218.2	243.5	292.3
KS	106.7	36.9	143.6	160.8
KY	33.2	195.4	228.6	255.0
LA	43.0	113.8	156.8	259.3
MA	1.8	29.3	31.1	70.5
MD	3.3	53.3	56.6	84.8
ME	11.5	60.8	72.3	87.0
MI	25.9	251.1	277.0	339.7
MN	130.5	125.3	255.8	290.2
MO	132.9	204.8	337.7	393.7
MS	89.4	200.7	290.1	319.5
MT	58.2	20.5	78.8	86.1
NC	27.4	272.6	300.0	394.2
ND	36.3	6.3	42.6	44.4
NE	100.8	26.1	126.8	137.1
NH	4.5	39.7	44.2	59.2
NJ	1.9	17.2	19.2	44.0
NM	49.8	33.6	83.3	99.7
NV	21.4	13.6	35.0	171.1
NY	18.0	241.0	259.0	331.4
OH	15.1	311.4	326.5	403.6
OK	91.4	108.4	199.8	233.6
OR	52.7	60.3	113.0	138.6
PA	20.3	255.6	275.9	373.1
PR	0.2	10.2	10.4	42.2
RI	0.0	5.0	5.1	15.2
SC	17.7	95.5	113.2	153.7
SD	46.9	11.7	58.6	63.2
TN	23.9	175.3	199.1	248.3
TX	412.9	402.5	815.4	988.6
UT	14.6	14.6	29.3	38.8
VA	28.9	248.7	277.6	322.2
VT	4.0	43.1	47.1	52.9
WA	94.6	81.4	176.0	229.0
WI	32.4	151.9	184.3	213.4
WV	33.5	176.6	210.1	237.1
WY	46.3	12.7	59.0	63.9
Total	2605.1	5522.3	8127.4	10309.4

XV. Appendix D: Figure 35

Figure 35: Proxy Model Input Data for Option 3, Density Zone 1, Zone 2, and Total Zones (1 to 9), HAI

State	HAI Interstate Zone 1, $30	HAI Interstate Zone 2, $30	HAI Interstate Zones 1 + 2, $30	HAI Interstate Total Zones (1 to 9), $30
AK	0.4	0.5	0.9	0.9
AL	27.4	87.0	114.4	114.4
AR	19.2	18.9	38.1	38.1
AZ	20.3	9.6	29.9	29.9
CA	52.2	26.7	78.9	78.9
CO	39.2	19.0	58.3	58.3
CT	0.0	11.7	11.7	11.7
DC	0.0	0.0	0.0	0.0
DE	0.3	2.4	2.7	2.7
FL	21.9	31.7	53.6	53.6
GA	20.1	56.7	76.9	76.9
HI	5.9	1.3	7.2	7.2
IA	26.5	19.1	45.6	45.6
ID	20.3	10.6	30.9	30.9
IL	26.7	62.8	89.6	89.6
IN	1.8	68.1	69.8	69.8
KS	42.0	8.7	50.7	50.7
KY	4.8	53.8	58.6	58.7
LA	23.8	38.9	62.7	62.7
MA	0.1	10.7	10.9	10.9
MD	1.2	22.7	23.9	23.9
ME	8.2	23.3	31.5	31.5
MI	14.8	61.6	76.4	76.4
MN	57.3	47.8	105.2	105.2
MO	55.5	90.8	146.3	146.3
MS	41.2	77.2	118.4	118.4
MT	20.3	3.0	23.3	23.3
NC	10.0	141.4	151.4	151.6
ND	16.4	1.0	17.4	17.4
NE	52.5	15.2	67.7	67.7
NH	3.4	15.1	18.5	18.5
NJ	0.7	4.9	5.7	5.7
NM	24.2	5.8	30.0	30.0
NV	19.1	2.0	21.1	21.1
NY	11.1	115.4	126.4	126.5
OH	1.1	89.7	90.8	90.8
OK	41.4	36.6	78.0	78.0
OR	19.3	21.2	40.5	40.5
PA	9.4	97.6	107.1	107.1
PR	0.5	4.2	4.8	5.8
RI	0.0	1.1	1.1	1.1
SC	5.5	28.4	33.8	33.8
SD	19.0	0.8	19.7	19.7
TN	5.1	69.7	74.8	74.8
TX	161.2	109.7	270.8	271.3
UT	10.1	3.0	13.1	13.1
VA	4.5	103.9	108.4	108.6
VT	1.6	16.0	17.6	17.6
WA	41.1	20.6	61.7	61.7
WI	10.4	37.2	47.6	47.6
WV	5.9	56.4	62.3	62.3
WY	24.6	1.8	26.5	26.5
Total	1049.6	1863.4	2913.0	2915.2

XVI. Notes

Notes

[1] FCC, *In the Matter of the Joint Board on Universal Service* (hereinafter referred to as *Universal Service Report*), CC Docket No. 96-45, *Report and Order*, FCC 97-157, May 8, 1997, ¶ 245, page 135.

[2] The FCC in its *Universal Service Report*, states "Consistent with the Joint Board's recommendation, we anticipate, however, that forward-looking support mechanisms that could be used for rural carriers within the continental United States will be developed within three years of release of this order." *Ibid.*, ¶ 293, page 160.

[3] Carol Weinhaus, Sandra Makeeff, Brian Roberts, *et al*, *Options for the Universal Service Fund* (hereinafter referred to as *Options for Universal Service*), Presentation at the November 1997 NARUC Meeting, Boston, MA, Telecommunications Industries Analysis Project, Boston, MA, October 15, 1997.

[4] The order of the options in this paper does not indicate preference for one over another.

[5] *Telecommunications Act of 1996*, Pub. L. No. 104-104, February 8, 1996 (hereinafter referred to as the *Act of 1996*). For more details, see U.S. Congress, House of Representatives, 104th Congress, 2d Session, Report 104-458, *Telecommunications Act of 1996, Conference Report to Accompany S. 652* (hereinafter referred to as the *Conference Report*).

[6] For information on these models, see the model sponsors. For the BCPM, Version 3.0, see U S WEST, Sprint, and BellSouth, January 14, 1998. For the HAI Model, see HAI, Release 5.0A, HAI Associates, Inc., Boulder, CO, February 16, 1998.

[7] The old USF non-rural and rural amounts are based on the *1997 USF Submission* by the National Exchange Carrier Association (NECA). The 1998 calculations for weighted DEM and LTS amounts for 1995 are from a USAC letter to the FCC, October 31, 1997. Starting January 1, 1998, LTS is calculated on a new basis. Lifeline support and Link-up support are from the USAC letter to the FCC, October 31, 1997. The support for schools, libraries, and rural health care providers is based on the amount of the annual cap set in the *Code of Federal Regulations (CFR)*.

Figure 1 in the paper uses the maximum amount for the schools, libraries, and rural health care subsidies. "The annual cap on federal universal support for schools and libraries shall be $2.25 billion per funding year." 47 C.F.R. § 54.507 (August 1, 1997). "The annual cap on federal universal service support for health care providers shall be $400 million per funding year." 47 C.F.R. § 54.623 (August 1, 1997). On December 16, 1997, the FCC's *Third Order on Reconsideration,* CC Docket 96-45 reduced this maximum amount for collection during the first six months of 1998. The FCC projections for this first quarter were $25 million for rural health care $300 million for schools and libraries. FCC *First Quarter 1998 Universal Service Contribution Factors Revised and Approved*, CC Docket No. 96-25, *Public Notice*, DA 97-2623, December 16, 1997.

[8] The total (rural and non-rural) costs for the provision of local service (from the BCPM and HAI proxy models) are included in the algorithm of the Ad Hoc Proposal. The Ad Hoc Proposal's algorithm then computes the levels of support used for Options 1A, 1B, and 1C.

[9] See **Section XIV, Appendix C**, for the assumptions and selections regarding these benchmarks.

[10] The data used in this paper may differ from the model's defaults since only non-rural data is used (with the exception of Options 1A, 1B, and 1C which use total outputs).

[11] *Options for the Universal Service*, page 3.

[12] NARUC Ad Hoc Working Group on Funding for High Cost Areas, *High Cost Support: An Alternative Distribution Proposal*, *Executive Summary* (hereinafter referred to as *Ad Hoc Proposal*), *ex parte* filing CC Docket 96-45 with the FCC, February 20, 1998, page 2.

[13] *Ad Hoc Proposal*, page 15.

[14] *Ibid.*, pages 14 and 15. "The 75 percent factor used here is an approximation of the composite state separations factor. It is used here for illustrative purposes to determine the approximate size of the federal fund required. It may be desirable in the final plan to use each state's individual composite separations factor in lieu of the fixed 75 percent amount. That change would not dramatically alter the amount of money allocated to each state nor would it dramatically alter the total size of the fund," ¶ 33, page 15.

[15] *Ad Hoc Proposal*, *Executive Summary*, page 2.

[16] *Ad Hoc Proposal,* page 13.

[17] *Ad Hoc Proposal*, *Executive Summary*, page 3.

[18] *Ibid*.

[19] *Ibid.* Also, discussion with Peter Bluhm, February 23, 1998.

[20] *Ibid*.

[21] See **Section III, What Does Each Option Cover?**, for a discussion of the costs used in Options 1A, 1B, and 1C.

[22] "Collections for the federal high cost support program should be derived from a charge on the interstate revenues of interstate carriers. The intrastate revenues of interstate carriers should not be used in any way in determining collections," *Ad Hoc Proposal*, page 8.

[23] *Ad Hoc Proposal*, spreadsheet attached to the filing dated January 10, 1998. "Federal USF Surcharge Rate: 2.40%".

[24] HAI Model, Version 4.0.

[25] See **Section XV, Appendix D, Figures 34 and 35**, for proxy model data for density zone 1, zone 2, and total zones (1 to 9).

[26] See **Section XIII, Appendix B, Figure 25** for the cash flow diagram and an outline of the steps in this process.

[27] *Universal Service Joint Board,* ¶ 833, page 426. In July 1997, the FCC stated that this *Order* "recognized that 25 percent is the current interstate allocation factor applied to loop costs in the Part 36 separations process, and concluded that because loop costs will be the predominant cost that varies between high-cost and non-high-cost areas, this factor best approximates the interstate portion of universal service costs. In adopting this approach, the Commission anticipated that states will participate fully in a federal-state partnership and that the contributions collected by both jurisdictions will be sufficient to fund universal service," *Order on Reconsideration*, July 10, 1997, ¶ 27.

[28] *Universal Service Joint Board,* ¶ 834.

[29] For an overview of universal service see Carol Weinhaus, Bob Lock, *et al.*, *Overview of Universal Service*, Presentation at the Communications Media Center, New York Law School, Telecommunications Industries Analysis Project, December 6, 1995. Also see the section on residual rate making in Carol L. Weinhaus and Anthony G. Oettinger, *Behind the Telephone Debates*, Ablex Publishing Company, Norwood, NJ, 1988, pages 64 through 66 (hereinafter referred to as *Behind the Telephone Debates*).

[30] See **Section II, What is the New High Cost Fund?** for the background on this total amount for Lifeline/Link-up, weighted dial equipment minutes (DEM), long term support (LTS), and the current USF fund (both rural and non-rural companies). These subsidies are explicit except for weighted DEM.

[31] Carol Weinhaus, Sandra Makeeff, *et al.*, *What is the Price of Universal Service? Impact of Deaveraging Nationwide Urban/Rural Rates*, Presentation at the July 1993 National Association of Regulatory Utility Commissioners (NARUC) Meeting, San Francisco, CA, Telecommunications Industries Analysis Project, July 26, 1993, Figure 3, page 11.

[32] Carol Weinhaus, Sandra Makeeff, *et al.*, *Loop Dreams: The Price of Connection for Local Service Competition*, Presentation at the July 1995 NARUC Meeting, San Francisco, CA, Telecommunications Industries Analysis Project, July 21, 1995, Figure 8, page 16. The 1993 nationwide average business rate was $38.55 and the nationwide average residential rate was $16.75.

[33] For illustrations of current cash flow of three programs designed to assist companies serving high-cost areas and low-income customers, see *Options for Universal Service*, Figures 10, 11, and 12, pages 22-24.

[34] The calculations for 1998 weighted DEM and LTS are from a letter from USAC to the FCC, October 31, 1997.

[35] Alexander Belinfante and James Eisner, *Universal Service Support and Telephone Revenue by State* (hereinafter referred to as *FCC Universal Service Support*), FCC, Common Carrier Bureau, Industry Analysis Division, January 1998, page 5, footnote 9.

[36] *Ibid*., page 6.

[37] *Ibid*., page 6, footnote 10.